# REPORT RESUMES

ED 014 477 24 TE 000 033

LANGUAGE ABILITY--GRADES TEN, ELEVEN, AND TWELVE. FINAL REPORT.

BY- LOBAN, WALTER
CALIFORNIA UNIV., BERKELEY

REPORT NUMBER CRP-2387 PUB DATE AUG 67
REPORT NUMBER BR-5-1065
CONTRACT OEC-4-10-131
EDRS PRICE MF-$1.25 HC-$11.12 276P.

DESCRIPTORS- *ENGLISH INSTRUCTION, *HIGH SCHOOL STUDENTS, *LANGUAGE ABILITY, *LANGUAGE LEARNING LEVELS, *LANGUAGE SKILLS, COMMUNICATION SKILLS, LANGUAGE ARTS, LANGUAGE FLUENCY, LINGUISTICS, LISTENING SKILLS, ORAL COMMUNICATION, READING SKILLS, SOCIOECONOMIC INFLUENCES, WRITING SKILLS, WRITTEN LANGUAGE, UNIVERSITY OF CALIFORNIA, BERKELEY

OVER A 13-YEAR PERIOD, EXTENSIVE LONGITUDINAL DATA WERE COLLECTED ON EVERY ASPECT OF THE LINGUISTIC BEHAVIOR OF 338 OAKLAND, CALIFORNIA, SCHOOL CHILDREN AS THEY PROGRESSED FROM KINDERGARTEN THROUGH GRADE 12. TAPED ORAL INTERVIEWS AND A WIDE RANGE OF TESTS AND INVENTORIES WERE CONDUCTED ANNUALLY TO MEASURE READING ACHIEVEMENT, LISTENING ABILITY, SKILL WITH WRITTEN LANGUAGE, AND ABILITY AND GROWTH IN FLUENCY WITH ORAL LANGUAGE. RESULTS INDICATE THAT STUDENTS WHO DEVELOP PROFICIENCY IN SPOKEN LANGUAGE WILL ALSO DEVELOP SKILLS IN WRITING, READING, AND LISTENING. UNLIKE STUDENTS OF LESSER ABILITY, STUDENTS WITH HIGH LANGUAGE PROFICIENCY WILL (1) USE MORE VARIED AND FLEXIBLE SYNTAX, (2) USE RELATIONAL WORDS EARLIER, MORE OFTEN, AND MORE ACCURATELY, (3) EXPRESS TENTATIVENESS AND SUPPOSITION MORE FREQUENTLY, (4) EMPLOY MORE ADVERBIAL CLAUSES OF CAUSE, CONCESSION, AND CONDITION, AND (5) USE MORE ACCURATE AND OPTIONAL GRAMMATICAL TRANSFORMATIONS IN THEIR SENTENCE STRUCTURES. CORRELATIONS SHOW THAT STUDENTS FROM ABOVE-AVERAGE SOCIOECONOMIC GROUPS WILL USE NON-STANDARD ENGLISH LESS FREQUENTLY AND WILL DEVELOP LANGUAGE SKILLS EARLIER AND TO A GREATER COMPETENCY THAN THOSE FROM BELOW-AVERAGE SOCIOECONOMIC GROUPS. (DL)

ED014477

BR 5-1065
PA 24

FINAL REPORT

Project No. 2387
(Contract No. OE 4-10-131

# LANGUAGE ABILITY: GRADES TEN, ELEVEN, AND TWELVE

by Walter Loban

August 1967

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

TE 000 033

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

# LANGUAGE ABILITY: GRADES TEN, ELEVEN, AND TWELVE

Project No. 2387
(Contract No. OE 4-10-131

Walter Loban

August 1967

The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

"PERMISSION TO REPRODUCE THIS COPYRIGHTED MATERIAL HAS BEEN GRANTED BY Walter Loban

TO ERIC AND ORGANIZATIONS OPERATING UNDER AGREEMENTS WITH THE U.S. OFFICE OF EDUCATION. FURTHER REPRODUCTION OUTSIDE THE ERIC SYSTEM REQUIRES PERMISSION OF THE COPYRIGHT OWNER."

University of California
Berkeley, California

## TABLE OF CONTENTS

Page

List of Tables . . . . . . . . . . . . . . . . . . . . . . vii
List of Figures . . . . . . . . . . . . . . . . . . . . . . xi
Acknowledgments . . . . . . . . . . . . . . . . . . . . . . xiv

PART I. INTRODUCTION . . . . . . . . . . . . . . . . . . . . 1

Background of the Longitudinal Study . . . . . . 1
Purpose of the Investigation . . . . . . . . . . 1
The Symbolic Nature of Language . . . . . . . . 2
Guiding Theory of the Research . . . . . . . . . 4
  Two Views of Language . . . . . . . . . . . . 4
Design of the Research, A Brief Overview . . . 4
The Data Collected . . . . . . . . . . . . . . . 6
  Oral Interviews . . . . . . . . . . . . . . . 6
  Typed Transcripts from the Oral Interviews . 7
  Written Compositions . . . . . . . . . . . . 7
  Reading Tests . . . . . . . . . . . . . . . . 7
  I.Q. Tests . . . . . . . . . . . . . . . . . 7
  Listening Tests . . . . . . . . . . . . . . . 8
  Tests on the Use of Subordinating Connectives . . . . . . . . . . . . . . . . 8
  Teachers' Ratings . . . . . . . . . . . . . . 8
  Book Lists . . . . . . . . . . . . . . . . . 9
  Other Data . . . . . . . . . . . . . . . . . 9
Hypotheses Being Tested . . . . . . . . . . . . 9

PART II. METHODS . . . . . . . . . . . . . . . . . . . . . . 12

A General Statement on Methodology . . . . . . . 12
Segmenting the Flow of Oral Language . . . . . . 12
  The Phonological Unit . . . . . . . . . . . . 13
  The Communication Unit . . . . . . . . . . . 15
  Examples of Communication Units . . . . . . . 17
  The Maze . . . . . . . . . . . . . . . . . . 17
  Examples of Mazes . . . . . . . . . . . . . . 19
First Level of Analysis . . . . . . . . . . . . 21
Second Level of Analysis . . . . . . . . . . . . 23
Two Analytical Methods Used during Earlier Phases of the Investigation . . . . . . . . 24
An Empirical Method of Determining Language Proficiency . . . . . . . . . . . . . 24
  Model Summary Sheet . . . . . . . . . . . . . 25

Page

The Amount of Subordination . . . . . . . . . . . . 26
  The New Weighted Index of Subordination . . . 30
The Use of Transformational Grammar to Assess Subordination . . . . . . . . . . . . 30
Structural Dislocations in Oral Language . . . 31
Difficulties with Conventional Usage and Grammar . . . . . . . . . . . . . . . . . . 32
Scales Developed during the Course of this Investigation . . . . . . . . . . . . . . 33
  The Teachers' Rating Scale . . . . . . . . . 33
  The Index of Writing Ability . . . . . . . . 33
Tests Derived from Other Research . . . . . . . 37
  A Test of Subordinating Connectives . . . . . 37
  The Kindergarten Vocabulary Test . . . . . . 37
  The Personality Inventory . . . . . . . . . . 38

PART III. A STATISTICAL DESCRIPTION OF THE SAMPLE . . . . 39

A Brief Statement about the Sample . . . . . . . . 39
Sex, Ethnic Background, and Socio-Economic Status . . . . . . . . . . . . . . . . . . . . 39
Spread of Intellectual Ability . . . . . . . . . 45
Increasing Statistical Reliability . . . . . . . 50

PART IV. RESULTS OF THE INVESTIGATION
FLUENCY WITH ORAL LANGUAGE . . . . . . . . . . . . 52

Nine Measures of Language Derived from the Oral Interviews . . . . . . . . . . . . . . . . . 52
  Total Number of Words in Transcript . . . . . 53
  Total Number of Communication Units in Transcript. . . . . . . . . . . . . . . . . 56
  Total Number of Words in Communication Units . 59
  Average Number of Words per Communication Unit . . . . . . . . . . . . . . . . . . . . 62
  Total Number of Mazes in Transcript . . . . . 65
  Total Number of Words in Mazes . . . . . . . . 68
  Average Number of Words per Maze . . . . . . . 71
  Mazes as a Percentage of Communication Units . 74
  Maze Words as a Percentage of Total Words. . . 77
Summary: Nine Measures of Oral Language. . . . . 81
Three Measures of Oral Language Related to the Subjects' Socio-Economic Status. . . . . . . . 81
  Average Number of Words per Communication Unit by Socio-Economic Groupings . . . . . . 82

Page

Average Number of Words per Maze by Socio-Economic Groupings . . . . . . . . . . . 84
Maze Words as a Percentage of Total Words in Transcript by Socio-Economic Groupings . . . 86

PART V. RESULTS OF THE INVESTIGATION PROFICIENCY WITH WRITTEN LANGUAGE. . . . . . . . . . 88

Average Number of Words per Communication Unit--Written Language . . . . . . . . . . . . . . . . 88
Comparison of Average Number of Words per Written Communication Unit by Socio-Economic Status. . . 93
Ratings of Written Compositions . . . . . . . . . . 93
A Second Method for Comparing the Ratings of Written Language . . . . . . . . . . . . . . . . 95
Comparison of Written Language Ratings by Socio-Economic Status . . . . . . . . . . . . . . 102
Summary: Proficiency with Written Language . . . 109

PART VI. RESULTS OF THE INVESTIGATION FINDINGS ON TESTS OF READING ACHIEVEMENT, LISTENING, USE OF SUBORDINATING CONNECTIVES, AND TEACHERS' RATINGS . . . . . . . . 110

Reading Achievement . . . . . . . . . . . . . . . . 110
Listening Tests. . . . . . . . . . . . . . . . . . 116
Tests of Subordinating Connectives . . . . . . . . 120
Teachers' Ratings. . . . . . . . . . . . . . . . . 125

PART VII. INTERRELATIONS FOUND IN THE RESEARCH . . . . . . . 130

A General Statement on Interrelations . . . . . . 130
Types of Interrelations Studied. . . . . . . . . . 131
Three Examples of Interrelations . . . . . . . . . 132
  Teachers' Ratings Compared to Average Number of Words per Oral Communication Unit . . . . . 132
  Teachers' Ratings Compared to Socio-Economic Status . . . . . . . . . . . . . . . . . . . . 133
  Socio-Economic Status Compared to Scores on Written Compositions . . . . . . . . . . . . . 134
  Interrelations Between Language Proficiency and Attitudinal Orientations . . . . . . . . . 135
  Attitudinal Orientations Compared to Scores on Written Compositions . . . . . . . . . . . . 136
  Attitudinal Orientations Compared to Average Words per Oral Communication Unit. . . . . . . 137
  Attitudinal Orientations Compared to Teachers' Ratings . . . . . . . . . . . . . . . . . . . 138
  Summary on Interrelations. . . . . . . . . . . . 138

Page

PART VIII. A SPECIAL STUDY ON THE ELABORATION OF LANGUAGE . . . . . . . . . . . . . . . . . . . . . . 140

The Definition of Elaboration . . . . . . . . . . . 140
The Subgroups . . . . . . . . . . . . . . . . . . 140
The Language Sample . . . . . . . . . . . . . . . 140
Findings on Elaboration . . . . . . . . . . . . . 141
Structural Patterns. . . . . . . . . . . . . . . 142
Proportion of Noun, Adjective, and Adverb Clauses Used by Each Group . . . . . . . . . . . 146
Functions of Noun Clauses. . . . . . . . . . . . 146
Types of Adverb Clauses . . . . . . . . . . . . . 151
Average Number of Words per Communication Unit . 154
A Mathematical Problem Pertaining to Average Number of Clauses per Communication Unit . . . 158
Average Number of Clauses per Communication Unit. 159
Average Number of Dependent Clauses per Communication Unit . . . . . . . . . . . . . . . 162
Summary on Elaboration . . . . . . . . . . . . . 163

PART IX. STANDARD ENGLISH USAGE . . . . . . . . . . . . . . . 169

The Definition of Standard English Usage . . . . 169
A Further Definition of Terms . . . . . . . . . . 170
The Groups to be Studied and Compared. . . . . . 170
Method of Selecting the Subgroups. . . . . . . . 171
Statistical Problems . . . . . . . . . . . . . . 172
Verb Problems . . . . . . . . . . . . . . . . . . 184
Pronoun Problems . . . . . . . . . . . . . . . . 199
Syntactic Confusion. . . . . . . . . . . . . . . 205
Other Problems . . . . . . . . . . . . . . . . . 213
Total Deviations . . . . . . . . . . . . . . . . 225
Total Deviations Apart from Social Class Dialect Problems . . . . . . . . . . . . . . . . 227
Summary and Conclusions. . . . . . . . . . . . . 229

PART X. SUMMARY AND CONCLUSIONS ON THE LONGITUDINAL STUDY OF CHILDREN'S LANGUAGE. . . . . . . . . . . . 231

Background and Purpose. . . . . . . . . . . . . . 231
Design. . . . . . . . . . . . . . . . . . . . . . 231
The Data Collected. . . . . . . . . . . . . . . . 232
Oral Interviews . . . . . . . . . . . . . . . . 233
Typed Transcripts . . . . . . . . . . . . . . . 233
Written Compositions. . . . . . . . . . . . . . 233

Page

    Reading Tests . . . . . . . . . . . . . . . . . . . . 233
    I.Q. Tests . . . . . . . . . . . . . . . . . . . . . 233
    Listening Tests . . . . . . . . . . . . . . . . . . . 233
    Tests on the Use of Subordinating Connectives . . . . . 233
    Teachers' Ratings . . . . . . . . . . . . . . . . . . 234
    Book Lists. . . . . . . . . . . . . . . . . . . . . . 234
    Other Data . . . . . . . . . . . . . . . . . . . . . 234
  The Communication Unit and the Maze . . . . . . . . . . 234
    The Communication Unit. . . . . . . . . . . . . . . . 234
    The Language Maze . . . . . . . . . . . . . . . . . . 236
  Hypotheses Being Tested . . . . . . . . . . . . . . . . 236
  Results of the Investigation . . . . . . . . . . . . . 240
    Fluency with Oral Language (Part IV). . . . . . . . . 240
    Proficiency with Written Language (Part V). . . . . . 242
    Tests of Reading Achievement, Listening, Use of Subordinating Connectives, and Teachers' Ratings (Part VI) . . . . . . . . . . . . . . . . . 243
    Interrelations Found in the Research (Part VII). . . . 245
    A Special Study on the Elaboration of Language (Part VIII). . . . . . . . . . . . . . . . . . . . . . 247
  Part One . . . . . . . . . . . . . . . . . . . . . . . 247
  Part Two . . . . . . . . . . . . . . . . . . . . . . . 248
    Standard English Usage (Part IX). . . . . . . . . . . 249

BIBLIOGRAPHY . . . . . . . . . . . . . . . . . . . . . . 252

APPENDIX . . . . . . . . . . . . . . . . . . . . . . . . 1

## LIST OF TABLES

Table Page

General Data on the Sample

1 Socio-Economic Status by Sex and Ethnic Group . . . . . 41

2 Socio-Economic Status by Sex and Ethnic Group (In per cent) . . . . . . . . . . . . . . . . . . . . . . 42

3 Socio-Economic Status of Caucasian and Negro Subjects . 44

4 I.Q. by Socio-Economic Status and Ethnic Group . . . . 49

Fluency with Oral Language

5 Total Number of Words in Transcript . . . . . . . . . . . 54

6 Total Number of Communication Units in Transcript . . . 57

7 Total Number of Words in Communication Units. . . . . . 60

8 Average Number of Words per Communication Unit . . . . 63

9 Total Number of Mazes in Transcript . . . . . . . . . . . 66

10 Total Number of Words in Mazes . . . . . . . . . . . . 69

11 Average Number of Words per Maze . . . . . . . . . . . 72

12 Mazes as a Percentage of Communication Units . . . . . 75

13 Maze Words as a Percentage of Total Words in Transcript 79

14 Average Number of Words per Communication Unit by Socio-Economic Status . . . . . . . . . . . . . . . . . 83

15 Average Number of Words per Maze by Socio-Economic Status . . . . . . . . . . . . . . . . . . . . . . . 85

16 Maze Words as a Percentage of Total Words in Transcript by Socio-Economic Status . . . . . . . . . . 87

Table Page

Proficiency with Written Language

17 Average Number of Words per Communication Unit--Written Language . . . . . . . . . . . . . . . . . . . . 90

18 A Comparison of Written and Oral Language on Average Number of Words per Communication Unit . . . . . . . . 92

19 Average Number of Words per Communication Unit by Socio-Economic Status--Written Language . . . . . . 94

20 Ratings of Written Compositions . . . . . . . . . . . . 96

21 Actual Number of Compositions in Each Category of the Rating Scale (In raw numbers). . . . . . . . . . . 99

22 Actual Number of Compositions in Each Category of the Rating Scale (In per cent) . . . . . . . . . . . . 100

23 Actual Number of Compositions in Each Category of the Rating Scale--Grand Total for Grades Four Through Twelve . . . . . . . . . . . . . . . . . . . . . 101

24 Ratings of Written Compositions by Socio-Economic Status . . . . . . . . . . . . . . . . . . . . . . . . . 103

25 Actual Number of Compositions in Each Category of the Rating Scale by Socio-Economic Status . . . . . 104

26 Actual Number of Compositions in Each Category of the Rating Scale by Socio-Economic Status (In per cent). . . . . . . . . . . . . . . . . . . . . . . . 105

27 Actual Number of Compositions in Each Category of the Rating Scale by Socio-Economic Status--Grand Total for All Years Combined . . . . . . . . . . . 108

Reading, Listening, Subordinating Connectives, and Teachers' Ratings

28 Reading Achievement Scores Using the Stanford and California Tests of Reading Achievement. . . . . . . 111

29 Reading Achievement by Socio-Economic Status . . . . . 114

30 Listening Test Scores. . . . . . . . . . . . . . . . . . 117

Table Page

31 Listening Test Scores by Socio-Economic Status . . . . 119

32 Test Scores on the Correct Usage of Subordinating Connectives. . . . . . . . . . . . . . . . . . . . . . . . 121

33 Ability to Use Subordinating Connectives by Socio-Economic Status . . . . . . . . . . . . . . . . . 124

34 Teachers' Ratings of the Subjects' Language Ability. . 126

35 Teachers' Ratings by Socio-Economic Status . . . . . . 129

Special Study on the Elaboration of Language

36 Structural Patterns Used in Elaboration Units--Oral Language. . . . . . . . . . . . . . . . . . . . . . . . 144

37 Structural Patterns Used in Elaboration Units--Written Language . . . . . . . . . . . . . . . . . . . . 145

38 Proportion of Noun, Adjective, and Adverb Clauses Used by Each Subgroup . . . . . . . . . . . . . . . . . 147

39 Functions of Noun Clauses . . . . . . . . . . . . . . . . 149

40 Types of Adverb Clauses . . . . . . . . . . . . . . . . . 152

41 Average Number of Words per Communication Unit and Rate of Growth . . . . . . . . . . . . . . . . . . . . . . . 155

42 Average Number of Clauses per Communication Unit and Rate of Growth--Using Main Clauses Added to Dependent Clauses . . . . . . . . . . . . . . . . . . . . 160

43 Average Number of Dependent Clauses per Communication Unit and Rate of Growth . . . . . . . . . . . . . . . 164

44 A Comparison of Growth Rates Using Alternative Methods of Computation . . . . . . . . . . . . . . . . . 166

Standard English Usage

45 Total Number of Words in Communication Units . . . . . 173

46 Average Number of Words per Communication Unit . . . . 175

Table Page

47 Median Scores and Range on Selected Measure of Grade Six . . . . . . . . . . . . . . . . . . . . . . . 176

48 Socio-Economic Status . . . . . . . . . . . . . . . . . . . 177

49 Adjusted Mean on Nonstandard Usage by High Caucasian Group per 1,000 Words of Spoken Volume . . . . . . . 180

50 Adjusted Mean on Nonstandard Usage by Low Caucasian Group per 1,000 Words of Spoken Volume. . . . . . . . 181

51 Adjusted Mean on Nonstandard Usage by Negro Group per 1,000 Words of Spoken Volume. . . . . . . . . . . 182

52 Adjusted Mean on Nonstandard Usage by Random Group per 1,000 Words of Spoken Volume . . . . . . . . . . 183

53 Nonstandard Use of Verb Forms . . . . . . . . . . . . . . 195

# LIST OF FIGURES

Figure Page

General Data on the Sample

1 Frequency Distribution of Scores on the Kindergarten Vocabulary Test . . . . . . . . . . . . . . . . . . . 46

2 Frequency Distribution of Kuhlman-Anderson I.Q. Scores . . . . . . . . . . . . . . . . . . . . . . . . 48

Fluency with Oral Language

3 Total Number of Words in Transcript . . . . . . . . . . 55

4 Total Number of Communication Units in Transcript . . 58

5 Total Number of Words in Communication Units . . . . 61

6 Average Number of Words per Communication Unit . . . 64

7 Total Number of Mazes in Transcript . . . . . . . . . . 67

8 Total Number of Words in Mazes . . . . . . . . . . . . 70

9 Average Number of Words per Maze . . . . . . . . . . . 73

10 Mazes as a Percentage of Communication Units . . . . 76

11 Maze Words as a Percentage of Total Words in Transcript . . . . . . . . . . . . . . . . . . . . . . 80

Proficiency with Oral Language

12 Average Number of Words per Communication Unit--Written Language . . . . . . . . . . . . . . . . . . 91

13 Ratings of Written Compositions . . . . . . . . . . . . 97

Figure Page

### Reading, Listening, Subordinating Connectives, and Teachers' Ratings

14 Reading Achievement Scores Using the Stanford and California Tests of Reading Achievement . . . . . . 112

15 Listening Test Scores . . . . . . . . . . . . . . . . . . 118

16 Test Scores on the Correct Usage of Subordinating Connectives . . . . . . . . . . . . . . . . . . . . . . 122

17 Teachers' Ratings of the Subjects' Language Ability . 127

### Growth Rates

18 A Comparison of Growth Rates Using Alternative Methods of Computation . . . . . . . . . . . . . . . 167

### Standard English Usage

19 1A: Lack of Agreement of Subject and Verb, Third Person Singular--Excluding all Forms of the Verb to be . . . . . . . . . . . . . . . . . . . . . . . . 185

20 1C: Lack of Agreement of Subject and Verb While Using Forms of the Verb to be . . . . . . . . . . . . . 188

21 1D: Omission of the Verb to be . . . . . . . . . . . . 190

22 1E: Omission of Auxiliary Verbs . . . . . . . . . . . 192

23 1F: Nonstandard Use of Verb Forms . . . . . . . . . . 196

24 1G: Inconsistency in the Use of Tense . . . . . . . 198

25 2A: Nonstandard Use of Pronouns. . . . . . . . . . . . 200

26 2B: Use of that instead of who as a Relative Pronoun Referring to Persons . . . . . . . . . . . . . . 202

27 2C: Confusing Use of Pronouns . . . . . . . . . . . . 204

28 3A: Ambiguous Placement of a Word, Phrase, or Clause . . . . . . . . . . . . . . . . . . . . . 206

Figure Page

29 3B: Awkward Arrangement or Incoherence . . . . . . 208

30 4A: Omission--Except of Auxiliary Verbs . . . . . 210

31 4B: Unnecessary Repetition . . . . . . . . . . . . . 212

32 5A: Nonstandard Connection (Prepositions) . . . . 214

33 6A: Nonstandard Modification (Adjectival) . . . . 217

34 6B: Nonstandard Modification (Adverbial) . . . . . 219

35 7: Nonstandard Use of Noun Forms. . . . . . . . . . 221

36 8: Double Negatives . . . . . . . . . . . . . . . . 223

37 Total Number of Deviations per 1,000 Words of Spoken Volume . . . . . . . . . . . . . . . . . . 226

38 Total Number of Deviations per 1,000 Words of Spoken Volume with Deviations of Ethnic Origin (1A, 1D, 1E, 1F, 8) Subtracted . . . . . 228

# ACKNOWLEDGMENTS

To the many colleagues and friends who have made helpful suggestions during the course of the research, I would like to express my sincere appreciation.

Mrs. Gertrude Funkhouser, the departmental secretary, has graciously answered inquiries by telephone, by letter, and by visitors. She has helped to maintain order in the midst of changes and confusions. Mrs. Katherine Eardley skilfully drew each of the figures appearing in the monograph. Mr. Ralph Anderson and his staff at the Central Duplicating Services invariably do an outstanding job of typing, proofreading, and reproducing the varied monographs flowing from the University community.

Of those who have worked on the current three-year phase of the project, I am happy to have this opportunity to thank Miss Judith Swope, Mrs. Pauline Juda, Mrs. Maya Spence, Mrs. Martha O'Neal, Mrs. Vera Reiche, Miss Rosemarie Hudspeth, Mrs. Mary Ellen Demers, and Miss Cynthia Badie.

I would also like to express my appreciation to Dr. Catharine Bullard, who carries out the more intricate types of language analysis, and to Miss Janice Kujawa, who consistently does an excellent job on every variety of task.

Most particularly, I would like to thank Mrs. Marilyn Williams, whose wise administration and knowledge of all aspects of the research keep the project functioning smoothly, and Mr. Arthur Williams, who performs the statistical analysis and writes the basic drafts of all reports.

# PART I. INTRODUCTION

## Background of the Longitudinal Study

The research reported in this monograph deals with a thirteen-year longitudinal study of the language used by a stratified sample of 338 subjects during the entire course of their schooling (kindergarten through grade twelve).

The research began in 1953 with the selection of a total of eleven kindergarten classes as a representative cross-section of children then entering the public school system of Oakland, California. In the following years, each subject remaining within the geographic limits of the project was studied on an annual basis.[1] His voice was recorded on a tape recorder or similar recording device, and in addition to these standard oral interviews, a wide range of data was gathered on each facet of his linguistic behavior. This phase of the research, the accumulation of data and the publication of initial findings, continued until 1965-66 by which time all subjects remaining in the study had either graduated from high school or were no longer receiving academic instruction.

## Purpose of the Investigation

The study is concerned specifically with the use and control of language, the rates of growth exhibited by the subjects during the course of the investigation, the effectiveness of their communication, and the relationships among their abilities in speaking, reading, writing, and listening. From the outset, the basic purpose of the research has been to accumulate a mass of longitudinal data on each aspect of linguistic behavior, gathering the information in situations identical for each subject and using a cross-section of children from a typical American city so that the findings of the research can be generalized to any large urban population in twentieth century America. The major questions forming the purposes and dimensions of the investigation were the following:

. . . Just as in physical development, are there predictable stages of growth in language?

---

[1] For practical purposes the geographic limits were taken to be a distance of approximately 100 miles from the investigator's research headquarters at the University of California in Berkeley. Within this radius, a subject was considered to be still available for continued study.

. . . Can definite sequences in language development be identified?

. . . How do children vary in ability with language and gain proficiency in using it?

In addition, the investigation was also concerned with developing fundamental methods of analysis to aid the scientific study of children's language and to locate significant features of language worthy of further study.

## The Symbolic Nature of Language

A fundamental difference between the animal and the human world is linguistic. Animals can use and understand cues; they cannot cope with symbols. A growl, a call, even a green traffic light, cues like these--directly tied to a concrete situation--can take on meaning for animals as well as for human beings. Symbols, however, are instruments of complicated thought. They are not necessarily tied to the immediate situation, for by means of symbols human beings can allude to objects or concepts even in the absence of those objects or concepts. The language human beings use for discourse is therefore a system of arbitrary symbols used to designate concepts.

This system of linguistic symbols can also be enlarged to name new concepts such as sabotage which was presumably undefined before the industrial revolution, camouflage to depict modes of concealment devised in World War I, or astronaut to give a symbolic name to those pioneering the reaches of outer space. In addition, the response to a linguistic symbol is contingent upon the combination of symbols surrounding it. For example, the word shell is a symbol which produces a varying response depending upon the other symbols associated with it:

The captain of the destroyer decided to shell the harbor.
The shell of the oyster is often remarkably beautiful.
His mind had grown weary and his body was simply an empty shell.
The boy helped his mother shell the peas.

As a further example there is the strikingly different response in behavior elicited by the single symbol, not:

I love you.
I do not love you.
I hate you.
I do not hate you.

To go a step further one can see that the subtleties of language must be learned together with the set of symbols. To say "I do not dislike you" certainly carries a connotation completely different from saying "I like you."

This use of symbols to convey meaning is perhaps best illustrated by the case of Helen Keller. Until the day she learned *water* as a symbol and thereby *disassociated it from any particular wetness*, Helen Keller lived the life of a gifted animal using cues. On that day, in a spectacular leap, she extended her potential limits to the mental horizon of the human family.

No evidence has ever been verified of animals' making the leap from signs to symbolic language, from growls or grunts tied to particular aspects of their behavior to words freed from situations and arranged into systems.[1] Humans may, of course, use cues; but without the use of symbolic language, there would be no civilization among men, no dominance of abstract knowledge over that of the concrete, no formation of concepts, and no passing on of culture.[2] As a consequence, the definition of language adopted for this research is one which views translating experience into symbol systems as a basic and uniquely human activity, a *learned* activity rather than a form of intuitive behavior:

> "Language is a purely human and non-instinctive method of communicating ideas, emotions, and desires by means of a system of voluntarily produced symbols."[3]

---

[1] A summary of research on behavior in animals in relation to language may be found in Roger Brown, *Words and Things* (Glencoe, Illinois: The Free Press, 1958), Chapter V, "The Comparative Psychology of Linguistic Reference," pp. 155-193.

[2] Susanne K. Langer, in *Problems of Art* (New York: Scribners, 1957), pp. 21-26, makes an important point on the actual *limitations* of language. She feels that language alone cannot express the "inner reality," the moods and emotions often associated with human conduct. Thus her feeling is that *art* in its various forms is the culture's expression of this even more complex form of human communication.

[3] Edward Sapir, *Language* (New York: Harcourt, Brace, 1921), p. 8.

Something innate may encourage language acquisition, but it is not this writer's belief that the predisposition includes "ideas" as Naom Chomsky views it.

## Guiding Theory of the Research

### Two Views of Language

Linguistic research has usually emphasized form rather than content. Some scholars have maintained, however, that a language is not simply a system of forms, that the words and rules which make up a language really exist only in the act of *connected* speech. "Language must be looked upon as an *energeia* rather than as an *ergon*. It is not a ready-made thing but a continuous process; it is the ever-repeated labor of the human mind to utilize articulated sounds to express thought."[1] Modern Gestalt psychology, these scholars assert, persuasively leads one to view language as "an indissoluble unity which cannot be divided into the two independent and isolated factors, form and matter."[2] Modern linguistics, they believe, should be concerned not only with the nature of sounds but also with the meaningful function of symbols.

There is, of course, a danger that this could result in a position too far on the side of semantics and too antagonistic to structure. Significance is also conveyed by linguistic forms and, unless a speaker or writer can handle the forms adequately, he cannot express or understand "significance." Consequently, this present research emphasizes language both as a means of communication and as a formal system of sounds or markings. Analysis of both semantic and structural meaning will receive attention. Both content and form will be considered, and techniques of research using or combining both will be employed.

## Design of the Research, A Brief Overview

Perhaps the major problem faced by any form of longitudinal research is to keep the attrition rate within reasonable bounds. At the beginning it was hoped that a sample size of 338 would enable the researcher to retain approximately 50 subjects on whom there would be complete data from kindergarten through grade twelve. And as a further precaution, arrangements were made in

---

[1] Ernst Cassirer, *Essay on Man* (Garden City, New York: Doubleday and Company, 1953), pp. 156-157.

[2] *Ibid.*, p. 157.

1955-56 with the public schools of Berkeley, an adjoining city, to obtain data on 43 third graders who were then the same age as the Oakland subjects.[1] Fortunately, this procedure proved to be unnecessary and it was abandoned in 1957-58 once it became obvious that the retention rate in the research would be far higher than originally anticipated. A combination of persistence and good fortune made it possible to retain a total of 211 subjects throughout the entire thirteen-year period of the study.

Also of importance in the initial selection of the sample was the question of whether or not it would actually contain a true cross-section of the larger population. Care was taken to ensure a proportional representation of the socio-economic backgrounds typical of the city of Oakland. The range of family status went from those in definitely poor economic circumstances in the industrial areas down by the Bay, upward through the middle-class areas of the city, and then upward still further to those who lived in the more favored socio-economic circumstances of the hill-top districts. It should be noted, however, that stratification was not tied to a single variable. Precautions were taken to avoid any unique or unusual factors of selection. But at the same time a stringent effort was made to ensure representativeness on the bases of sex, ethnic background, and spread of intellectual ability.[2] The four characteristics decided upon--sex, ethnic background, socio-economic status, and spread of intellectual ability--were chosen as the bases of selection inasmuch as previous studies of children's language had identified one or more of these four variables as having a primary influence on language proficiency.

One further aspect of the research design which bears particular attention is the use of special subgroups selected from the total sample. The two subgroups most frequently used in the research are a group high in language ability and a group low in language ability. These have been chosen on the basis of a cumulative average of teachers' ratings (of the subjects' language ability to those subjects in the total sample.[1]

---

[1] Samples of the oral and written language of the Berkeley subjects, together with other useful data, were filed without analysis after being collected for a three-year period.

[2] The initial method of determining spread of intellectual ability was a Kindergarten Vocabulary Test of 100 items. This will be described in more detail at a later point in the monograph.

One of the fundamental objectives of the research has been to develop new methods of analysis which will make it possible to study scientifically the use of language in both its semantic and structural aspects. As the findings of the research are sifted and subjected to further forms of analysis, older methods may be refined or improved upon, or in an extreme case a completely new method of analysis may seem more appropriate to a given set of linguistic data. Thus, as in any study intended to chart new ground over an extended period of time, the research is based on a developmental design with hypotheses and methods subject to modification during the course of the continuing project.

## The Data Collected

For each subject in the study an effort was made to obtain as comprehensive a record as possible, not only on his linguistic growth and behavior but also on other variables which might have a bearing on the ways in which he learned to speak, read, write, and listen to the English language. Among the data being studied are the following:

### Oral Interviews

Once annually in the spring each subject was interviewed individually with his responses recorded on either a tape recorder or a similar recording device (an Audograph). In any given year the interviews were identical for all subjects although it should be noted that the format of the interviews was altered periodically during the course of the project to take into account the advancing age of the subjects. Typical of the early years were questions about games, playmates, and television; in later years the emphasis shifted to such items as parties attended, plans for the future, and the books or magazines read during that year. (As part of the oral interview each subject was asked to discuss one book or magazine he found of particular interest.)

In addition to the various opening questions posed by the interviewer, a series of pictures was used to elicit response. Again, the same series of pictures was shown to every subject in any given year although these too were periodically altered during the course of the study to take into account the growing maturity of the subjects.

---

[1] In cases where a particular method of analysis would have required a prohibitive expenditure of time, a random group has been used in place of the total group of subjects.

At present, with all data gathered, there are approximately 3250 recorded interviews being subjected to analysis.

## Typed Transcripts from the Oral Interviews

Undoubtedly, the most time-consuming process of the entire research has been to type and analyze the subjects' oral interviews. The need for precision was rather obvious since these typed transcripts constitute one of the most valuable sources of data collected during the entire thirteen-year period, and as a result many thousands of hours were devoted to this phase of the study by a group of highly trained typists who worked to transcribe the interviews accurately according to a detailed set of instructions. Fortunately this phase of the research is nearing the final stage, and when finally completed there will be subject to analysis a total of approximately 3,500,000 words of spoken volume.

## Written Compositions

Beginning in grade three, samples of written language ability were secured for all subjects remaining in the study. These were obtained on a yearly basis (one composition per year) with the exception of grades ten, eleven, and twelve when it was possible to secure two or more compositions for every subject. Thus, in addition to the data on oral language, there is available for study a longitudinal record of writing ability from grade three through grade twelve.

## Reading Tests

The data on reading ability consist of test scores on either the Stanford or California tests of reading achievement. Data were accumulated from grade four through grade nine with the scores converted to the number of years and months a given subject reads above or below his chronological age. A reading test was not administered to every subject in every year; however, the accumulation of data is clearly sufficient for a definitive statement about the subjects' reading ability.

## I.Q. Tests

In grade two of the Oakland primary schools, the Kuhlman-Anderson Intelligence Test is administered to all pupils. In addition, the majority of students are tested again in grades four, five, and six using this same form of the Kuhlman-Anderson Test.[1] In cases where a discrepancy appears between a pupil's score and the teacher's observations of the pupil's intellectual performance in class, further testing is carried out with either another form of the same test or with the individual Stanford-Binet Scale. As part of the data gathering process, all I.Q. scores were obtained for every subject in the study.

## Listening Tests

In all years of the study, teachers rated the subjects on quality of listening. In grades eight and nine and again in grades eleven and twelve, the STEP Test of Listening Ability was administered to the majority of subjects in the study.[2]

## Tests on the Use of Subordinating Connectives

Beginning in grade five and continuing through grade twelve a test of the ability to use subordinating connectives was administered to every subject remaining in the study. The test contains fifty items which are sentence completions designed so that the written response indicates whether or not the subject is able to correctly use such words as therefore, however, moreover, etc.

## Teachers' Ratings

In every year of the study each subject's teacher rated him on a specified series of language factors, with each factor scored on a five-point scale. Throughout the course of the research, the following factors were included:

---

[1] A relatively small percentage of students are tested still further in grades seven and eight.

[2] In attempting to obtain scores of listening ability, two problems were encountered which made it impossible to test every subject in every year the test was administered. In cases where a particular subject proved to be a disruptive influence, it was thought best to exclude him rather than to risk introducing a bias in the scores of those remaining in the group being tested. Also, there was a certain problem of economics in that if some subjects were absent or unable to complete the listening test, the prohibitive cost of driving to a particular school and administering the test individually ruled out the possibility of obtaining a score of listening ability for those subjects.

1. amount of language
2. quality of vocabulary
3. skill in communication
4. organization, purpose, and control of language
5. wealth of ideas
6. quality of listening

In addition, beginning in grade four, the teacher was also asked to rate the subject on the quality of his writing and on his skill and proficiency in reading. Inasmuch as a cumulative average of teachers' ratings comprised the basis on which the investigator selected certain subgroups for special study (a group high in language proficiency and a group low in language proficiency), the scale merits particular attention. A sample of the teacher's rating scale may be found in the appendix of this monograph.

### Book Lists

Beginning in grade four and continuing through grade twelve, each subject was asked to list the books he had read during the previous year. The assumption, of course, is that the lists are incomplete since even an adult of good intelligence would have difficulty in remembering every book he had read during a span of an entire year. Care was taken, however, to obtain as complete a record as possible. No subject was permitted to turn in a blank list. In those instances where a subject was a poor reader or perhaps was not able to write the titles of anything he had read, a member of the staff obtained the information orally and filled in the book list. For those subjects whose reading ability was so poor that they had not read a single book during the previous year, information was obtained on the magazines or comic books they had read in order to have at least some basis for determining their individual reading habits.

### Other Data

Among the other types of data accumulated during the course of the study were statements about the television programs the subjects watched, personality profiles, language questionnaires, records of school attendance, grades, and general state of health.

## Hypotheses Being Tested

As previously indicated, the total group of subjects was selected on the bases of sex, ethnic background, socio-economic status, and spread of intellectual ability. Thus the reader should bear in mind that even though it may not be stated explicitly, whenever appropriate any given hypothesis will be tested in terms of these four characteristics as well as in terms of the particular characteristic mentioned.

The theoretical base from which many of the research hypotheses emerge can be stated concisely: learning equips an individual with broad patterns of response rather than one-to-one relationships. This concept is more fully developed in the following two books:

W. Edgar Vinacke: The Psychology of Thinking
New York: McGraw-Hill, 1952.

Jerome S. Bruner, Jacqueline J. Goodnow, and George A. Austin:
A Study of Thinking
New York: John Wiley and Sons, 1957.

Among the hypotheses being tested are the following:

1. Subjects who have developed skill in the spoken language, using pitch, juncture, and stress effectively for purposes of oral communication, will also develop the skills of writing, reading, and listening more fully than those who have not developed the same degree of skill in the spoken language.

2. Subjects with the highest degree of ability in speech and writing will use more varied and flexible patterns of syntax than those with less ability.

3. Subjects with high language proficiency will more frequently use phrases of all kinds in preference to longer subordinate clauses whenever a choice between the two is possible.

4. Subjects with high language proficiency will use modal auxiliaries and aspect to control the verb at an earlier age and more often than subjects with low language ability.

5. Subjects with high language proficiency will use relational words (e.g., subordinating connections such as moreover, although, because, etc.) earlier, more often, and more accurately than other subjects.

6. Subjects with high language proficiency will express more frequently than other subjects such matters as tentativeness and supposition. Their language will reflect flexibility rather than rigidity of thinking and expression.

7. Predictable stages of growth in each feature of language will emerge and can be identified for individual subjects and groups.

8. The relationships of ability in speech, reading, writing, and listening will be positive for the subjects. However, there will not be a uniform chronological development of all four areas of the language arts and the development of these abilities in individuals will not take place in an even manner. The tendency will be for overall development to follow the gains of each individual subject, but some subjects will make notable progress in one area of development (for example in reading or listening) at a time when very small gains in power are made in other areas (for example in speech or writing).

9. Subjects proficient in language will use most optional grammatical transformations in their sentence structures and will be more accurate in their obligatory grammatical transformations than those lacking in proficiency.

10. Subjects with high ability in language will use more adverbial clauses of cause, concession, and condition than subjects of low language ability.

11. Subjects with high language proficiency will be able to use and to interpret metaphorical and symbolic language and pictures with greater success than subjects with low language proficiency.

12. Subjects from above average socio-economic status will develop language power earlier and to a greater competency than subjects from below average socio-economic status.

13. If a subject's socio-economic position remains constant, it will be possible to predict accurately his growth in language proficiency.

14. Nonstandard English usage will be significantly less frequent for subjects of above average socio-economic status than for those of below average socio-economic status.

15. Subjects who have the most interaction with other persons will develop the skills of language more rapidly than those whose contacts with other persons are more limited.

16. Subjects with highest ratings on school attendance will also rank highest on development of skill in language.

## PART II. METHODS

### A General Statement on Methodology

During the course of the study, many different kinds of methods and analyses have been used. Some of these were new, originated for this investigation; some were derived from other research. In order that future research workers might use the same procedures for purposes of further application, verification, or refutation, the data have been collected and analyzed by methods allowing for repetition. Wherever applicable and appropriate, standard procedures of quantitative and statistical description have been used. Methods derived from other research have been described and footnoted so one may easily locate the initial study. New methods have been discussed at length, and when helpful, illustrative examples have been provided. Thus, by using a wide range of analyses, it is possible to present the status of the subjects' language ability at equally spaced periods of time. Whether one is interested in normative data for the group or in changes exhibited by individuals, the data will provide the answers.

To simplify the presentation on methodology, the various methods and analyses have been classified into ten categories, each of which will be discussed individually.

### Segmenting the Flow of Oral Language

A critical problem in the research was devising an objective method for segmenting the flow of oral language. Words alone, for example, offer a crude basis for numerical count but show nothing about relations among words. Traditional grammatical divisions, such as sentences, also blur important distinctions and often do not correspond to the actuality of oral language in which utterances may be only phrases or single words. As a consequence, the system of segmentation finally decided upon was one which combined several approaches. First the subjects' speech was segmented by oral intonation patterns and then, within such intonation segments, syntactic units (each independent predication) were identified.

> . . . The first of these--intonation pattern--is judged by the contours of inflection, stress, and pause in the subject's voice. Because the segmentation is made in accordance with the sound-system of English, this first and more comprehensive segment is called a phonological unit.

> . . . The second unit, usually a subdivision of the phonological unit but sometimes coextensive with it, is called a communication unit because it is identified by the meaning being conveyed.
>
> . . . Beyond these two kinds of segmentation, a third element still remained to be accounted for, an exceptionally interesting and frequent occurrence that could best be described as a tangle of language making no semantic sense and impossible to classify phonologically or semantically. These language tangles have, therefore, been segmented separately and have been labeled mazes. Each of these three segments will now be described more fully and illustrated by examples.

## The Phonological Unit

The phonological unit is an utterance that occurs between the pauses or silences within a subject's speech; it is used in connection with the subject's pitch to show a pause or juncture in speech which is a clear-cut termination of the utterance. As an example, one child in the study said the following:

> I'm going to get a boy | 'cause he hit me. # I'm going to beat him up and kick him in his nose ‖ and I'm going to get the girl, too. #

The moments of silence, or pauses in the subject's speech, in association with his use of pitch, are shown by the two double-cross junctures (#); this symbol is used to indicate a clear-cut termination of an utterance. Such a termination is usually marked by a definite pause, preceded by a diminishing of force and a drop in the pitch of the voice (or a rise in pitch for queries). The other two marks--the double-bar juncture (‖) and the single-bar juncture (|)--represent momentary silences, or pauses of less finality. In this example, the speaker used two definite phonological units, corresponding to the two sentences; these units were characterized by definite pauses preceded by a definite drop in pitch.[1] The phonological unit, then, is an utterance occurring between the silences represented by double-cross junctures.

---

[1] For a more complete discussion of these terms, see W. Nelson Francis, The Structure of American English (New York: Ronald Press, 1958), p. 157, and Archibald A. Hill, Introduction to Linguistic Structures (New York: Harcourt, Brace and World, 1958), pp. 13-30.

In the example shown above, the phonological units are actually identical to traditional grammatical sentences. However, the reader may be assured that subjects in this study often did not let their voices drop and pause at the end of every traditional sentence. Moreover, the subjects sometimes answered questions in phonological units which grammatically would be considered subordinate clauses.

Spontaneous recognition of the phonological units exacts the utmost effort and concentration from whoever is marking them. Pitch, volume, and juncture are never used as regularly, precisely, and unambiguously as they would be in an ideal linguistic world. The clearest and ablest speakers among the subjects customarily do use intonation with great skill, signaling the endings of their utterances by unmistakably falling pitch, fading volume, and definite pause. Many are not this skilled, however, and furthermore each individual's intonation system is unique; each element of vocal signaling--pitch, pause, stress--is relative to that individual's idiosyncratic ways of speaking. Thus each speaker is a new challenge to the analyst, who must become almost intuitively accustomed to that individual's speed or deliberateness of speaking, ways of breathing, degrees of pitch variation, length of juncture, and amount of stress. Personal styles of impulsiveness, emphasis, and enunciation encircle the basic intonations and influence the analyst-listener. The Gestalt principle, that the elements one perceives are influenced by the ground and field against which they are received, could not be more strikingly exemplified.

In practice, phonological units are not regularly identified in the research reported here. Earlier in the study, when the subjects were in the elementary grades, the phonological units were identified and marked, but since grade seven these markings have been used only when the analyst was puzzled about a maze or a communication unit. Experience has developed in the staff analyst an exceptional ability to segment the communication units on the typed transcript by listening to the recordings and using intonation as an aid. Occasionally, however, there is some doubt about where a particular communication unit begins or ends. In such cases, the tape is replayed again and again while several analysts listen in order to reach concurrence. In such cases, the phonological markings are carefully made on the transcript.

Frequently, the problem requiring such replaying, careful listening, and analyst consensus and marking occurs when a subject completes an utterance and then adds an afterthought to it. Here are two examples taken from the transcripts:

1) # he looks like he found buried treasure # on that old
ship #

2) # it's about these four men # during the Civil War time #

Study of afterthoughts like these reveals that the subjects use a systematic method for linking afterthoughts to a previous utterance: the link is the subject's introduction of the afterthought on the same low voice pitch with which he concluded the previous utterance. If we mark for pitch the examples shown above (using 1 for low pitch, 2 for ordinary pitch, and 3 for high pitch), this is what we get:

1) # he looks like he found buried $\overset{2}{\text{trea}}\overset{1}{\text{sure}}$ # $\overset{1}{\text{on}}$ that old
$\overset{1}{\text{ship}}$ #

2) # it's about these $\overset{2}{\text{four}}$ $\overset{1}{\text{men}}$ # $\overset{1}{\text{during}}$ the Civil War time #

"Low pitch linkage" is characteristic of afterthoughts cast in many types of grammatical construction--prepositional phrases, infinitives, appositives, dependent clauses.

Low pitch $^{1}$ following the typical sentence intonation pattern, which is $^{2\ 3\ 1}$ #, is a signal of sentence continuation, whereas ordinary pitch $^{2}$ is a signal of new sentence beginning:

# he likes to $\overset{2}{\text{find}}$ $\overset{1}{\text{shells}}$ # $\overset{2}{\text{on}}$ the beach he looks for the new
ones washed up by the $\overset{1}{\text{tide}}$ #

Inasmuch as the main purpose of phonological segmenting in this research is to reinforce and substantiate decisions on communication units, these phonological units are not marked unless real doubt about a communication unit arises. The important aim in segmenting is to establish accurately the communication units and the mazes since they are the segments that tell the most about growth in language proficiency.

## The Communication Unit

The communication unit is the most important method of segmentation used in this research. It is by this method that the typed transcripts of the subjects' oral interviews are divided and and anlyzed. In addition, this method of segmentation, used not only in the analysis of oral language but also in the analysis of the subjects' written compositions, gives rise to one of the most crucial measures of the research--the average number of words per communication unit.

The definition of the communication unit may be stated either semantically or structurally. In semantic terms it is a group of words which cannot be further divided without the loss of their essential meaning. Basically, this is what Watts has termed "the natural linguistic unit."[1] In structural terms, the communication unit in this research is each independent clause with its modifiers. No kind of segmentation is most efficiently achieved structurally, but it can be validated by the use of meaning. Some linguists have been critical of any use of "communication," or meaning, urging a rigorous use of structure alone. The writer, however, has seen no problem in using meaning as a double-check on the structural methodology actually being used; some mistakes have been located in this way, no dilemmas have arisen, and the research has retained a closer alliance with the ultimate purpose of language. In more recent research by Kellogg Hunt, this same method of segmentation has been called the T-Unit.[2]

As an illustration of what would or would not comprise a communication unit, a very simple example may be shown. If one were to say "I know a boy with red hair," it would be a unit of communication. However, if the words "with red hair" had been omitted (chopped off, so to speak, by a different method of segmentation), the essential meaning of that particular unit of communication would have been changed. "I know a boy" does not mean the same thing as "I know a boy with red hair." Thus in all cases, the words comprising a communication unit will fall into one of the following three categories:

(1) each independent grammatical predication

(2) each answer to a question, an answer which lacks only the repetition of the question elements to satisfy the criterion of independent predication

(3) each word such as "Yes" or "No" when given in answer to a question such as "Have you ever been sick?"

---

[1] A. F. Watts, The Language and Mental Development of Children (Boston: D. C. Heath & Company, 1948), pp. 65-66.

[2] Kellogg W. Hunt, Grammatical Structures Written at Three Grade Levels (Champaign, Illinois: National Council of Teachers of English, 1965).

Thus, these units prove to be not exclusively semantic. They are also syntactic, being composed of independent predications; and in addition they can be identified by their form as well as by their meaning. Actually, Watts' use of the term "essential meaning" would be difficult to define scientifically. As a consequence, the formal definition adopted for this research--that of an independent clause between two silences--becomes more defensible than the semantic (or essential meaning) definition.

The following examples illustrate the method of tallying communication units. A slant line (/) marks the completion of each communication unit. (The # marks the completion of a phonological unit.) Contractions of two words into one are counted as two words.

### Examples of Communication Units

| Transcript of subject's actual language | Number of communication units | Number of words in each communication unit |
|---|---|---|
| I'm going to get a boy 'cause he hit me. # / | 3 | 11 |
| I'm going to beat him up and kick him in his nose ‖ / | | 13 |
| and I'm going to get the girl, too. # / | | 9 |

Note that the first communication unit could not be divided after "boy" without the disappearance of (1) its essential meaning and (2) a subordinate clause that is a structural part of the independent predication. Note in the last two communication units that a compound predicate with the same subject is classified as one unit, but a compound sentence (which can be divided structurally and also without essential loss of meaning) becomes two communication units. This distinction is of importance to this study and should be noted carefully by the reader.

## The Maze

When listening to the subjects' recorded interviews or reading the typed transcripts of their oral language, one cannot help but notice how frequently they become confused or tangled in words. In many respects their behavior in language resembles the physical behavior of someone who is trapped in a spatial maze. They thrash about in one direction or another, hesitating, making false starts, or needlessly repeating themselves, until finally they either abandon their goal or find a path leading to where they wish to go. On occasion they stumble upon the path accidentally; on other occasions they have enough presence of mind to pause and try to reason exactly where they are. In this research these linguistic tangles have been labeled mazes.

To define it more precisely, a maze is a series of words or initial parts of words which do not add up to a meaningful communication unit. It is an unattached fragment or a series of unattached fragments which do not constitute a communication unit and are not necessary to the communication unit. Sometimes the mazes are long, consisting of ten or more words or fragments of words. On occasion the subjects persevere with the ideas they are trying to formulate, achieving a unit of communication despite their initial confusion. At other times the subjects abandon the ideas they are trying to express, perhaps finding the problem too difficult or too tiring to express, or not worth the effort. It is entirely possible, of course, that in another situation, in which the motivation was much greater, the same idea represented in the maze might find its way to a clear expression of meaning. The energy level or the health of the subject may also be decisive factors in the child's success or failure in converting an idea into a genuine unit of communication.

## Examples of Mazes

(Mazes are in brackets. The number of words in maze is circled.)[1]

| Transcript of subject's actual language | Description of maze | No. of communication units | No. of words in each communication unit |
|---|---|---|---|
| 1. [I'm going] . . . I'm goin' to build a flying saucer/ but I can't think how yet. # | Short maze at the beginning of a communication unit and integrally related to that communication unit. | 2 | ③-8<br>7 |
| 2. When I was fixin' ready to go home, my mother called me up in the house/ an' [I, I, have to] I have to get my hair combed. # | Short maze in the middle of a communication unit and integrally related to that communication unit. | 2 | 16<br>1-④-7 |
| 3. I saw a hunter program last Sunday/ [an' he, an' snow time he had to have lot uh, wah-h when he, uh, not too many dogs, he] . . . and that's all I think of that picture. | Long maze not immediately related to a communication unit. The child apparently drops the idea he was trying to express, deeming it too complicated for his powers. | 2 | 7<br>⑱<br>9 |

---

[1] In the actual transcript, the analyst always brackets and encircles mazes in red pencil.

In studying the examples of mazes, the reader will note that when a maze is removed from a communication unit the remaining material always constitutes a straightforward, acceptable unit of communication. Furthermore, just as the communication units fall within phonological units, so too do the mazes. It should be noted, however, that mazes are not counted as communication units. The procedure has been to mark the maze in red brackets and enter a red number on the subject's transcript (as shown by the circled numbers in the example above). Then, as a derivative of the initial analysis, it is possible to compute such data as average words per maze, maze words as a percentage of total words, etc., in order to have some measure of the subject's degree of linguistic confusion.

Statistically, of course, the problem of dealing with mazes would seem relatively slight. After counting the words in a maze, one presumably has a number which may be compared to any other number. In actual practice, however, mazes continue to be one of the more confusing variables encountered in this research. The examples shown are what one might term "textbook examples." Each is clearly defined so the reader will not become confused when trying to learn what has been studied. In the research itself, however, the subjects' language sometimes becomes so intricate that it is difficult to tell if one is actually dealing with a maze or with a false start that is too clearly spoken to be judged a maze and yet not completed to the point that it would be considered a communication unit.[1]

In addition to the difficulties sometimes encountered in analysis, there is a further problem with mazes which points up the fact that one should not become excessively dependent upon statistical measurement. Frequently the investigator has encountered two subjects who have an equal proportion of mazes; and yet, when studying other measures of their language ability, one notices that the language skills of the subjects in question appear to be inherently different. For example a subject with a low maze count may be the type of person one would describe as being thoughtful, reflective, and careful to speak precisely. On the other hand, the mere fact that the proportion of mazes is low is no proof that the subject actually has these characteristics. A low maze count is also associated with subjects classified as exceptionally poor in language ability, those who tend to speak in slow, short communication units because of a basic difficulty in verbalizing their ideas.

---

[1] In the most intricate flows of language, a subject may have one or two uncompleted thoughts, an aside having only a tenuous bearing on what is being said, and a further flow of language that culminates in a completed unit. Each of these in turn may have one or two maze words within it in addition to mazes at the beginning or end of the given segment.

The opposite case is those who have a high proportion of mazes. Here again we may encounter two extremes of language ability. In one instance a subject may be so bright and eager to communicate that his speech tends to bubble forward and produce a high incidence of mazes. In another case, a high maze count may be the result of a complete disorganization of thought--a lack of verbal control which produces a constant series of hesitations and false starts.[1]

### First Level of Analysis

After segmenting a subject's transcript into a series of communication units, the next problem faced by the investigator was to find a method of classifying these units of communication so any given subject could be compared to any other. In this research, the decision was made to classify communication units according to a system of basic structural patterns. In all a total of nine patterns (and one pattern described as a partial) were used, and examples of these are shown below.

| Pattern | Symbol | Examples |
|---|---|---|
| one | 1 2 or 1 ②<br>(Subject-Verb) | Mary eats. (or)<br>Mary is home. |
| two | 1 2 4<br>(Subject-Verb-Direct Object) | Mary eats strawberries. |
| three | 1 ② 5<br>(Subject-Linking Verb-Complement) | Strawberries are berries.<br>Strawberries are good. |
| four | 1 2 3 4<br>(Subject-Verb-Indirect Object-Direct Object) | Mary threw the dog some biscuits. |

---

[1] Still another case which tends to produce a high maze count is the occasional subject whose language seems to reflect a certain affectation on his part. He shifts backward and forward and uses a great many asides in his spoken language, speaking with relative clarity and yet unable to fit each complicated piece of thought into a unified whole.

| Pattern | Symbol | Examples |
|---|---|---|
| five | 1 2 4 6<br>(Subject-Verb-Direct Object-Outer Complement) | They elected Mary president.<br>They thought Susie conceited. |
| six | (1) ② 1<br>(Expletive-Linking Verb-Subject) | Here is Mary.<br>There are four houses on Lime Street. |
| seven | Questions | How does he do it?<br>Is he here? |
| eight | Passive forms | Strawberries were eaten by Mary. |
| nine | Requests, commands | Go home. (or) Let us go home. |
| (ten) | Partials | Any incomplete unit. (This is not actually a pattern like the preceding nine patterns.) |

The reader should note that the First Level of Analysis includes a grammatical classification of each communication unit being studied. This procedure includes identifying the component parts of each unit as to function and identifying movable elements including clauses and phrases.[1]

Also of importance is the fact that mazes do not fall into any of the ten patterns shown above. The purpose of using the patterns was to find a method of classifying communication units;

---

[1] The precise symbols used in the analysis of communication units (such as 0 = ellipsis of an essential part of the sentence) have not been reproduced for use in this monograph. These symbols, as well as a more detailed discussion of the methods of the First Level of Analysis, are available in the following two publications by the investigator: The Language of Elementary School Children (Champaign, Illinois: National Council of Teachers of English, 1963), and Language Ability: Grades Seven, Eight, and Nine (Washington, D.C.: Superintendent of Documents, U.S. Government Printing Office, 1966).

analysis has shown that once any mazes have been removed, all communication units fall into one of the above categories.

From the First Level of Analysis, then, it is possible to determine the frequency and variety of structural patterns used by the subjects. In addition, since samples of the subjects' written language have also been obtained, it is possible to determine whether or not subjects use the same patterns in their writing as in their speaking.[1]

## Second Level of Analysis

The Second Level of Analysis is actually a deeper and more penetrating analysis of each of the component elements studied at the First Level. At this stage each communication unit has already been classified into its structural pattern, each has been carefully dissected from the standpoint of grammar, and each is now ready to be subjected to a variety of statistical techniques. Obviously, the possibilities for fruitful analysis are virtually without limit, and this phase of the investigation is designed to answer such questions as the following:

. . . Do some subjects use more subordination than others?

. . . Do younger children tend to use single words rather than phrases or clauses for subjects and objects?

. . . Which subjects use the more complicated nominals?

. . . What can be learned from an intensive study of verbs?

These, of course, are only a few of the questions that could be posed. Once any given piece of data has been analyzed, it is also possible to link it to the other data accumulated during the course of the study. For example, it might be of value to determine whether or not a high score on a standardized test of reading were associated with such variables as a high degree of subordination or a large repertoire of movable elements found in the subject's oral communication units. And to go a step further, the data could then be compared on the bases of sex, ethnic background, socio-economic status, and intellectual ability.

---

[1] The data could also be used to show whether or not the patterns occurring in children's readers correspond to the patterns children use in their spoken and written language.

## Two Analytical Methods Used during Earlier Phases of the Investigation

During the course of the investigation, two additional tools of analysis have been developed which may be of interest to some readers. These are the Function of Communication Units and the Classification of Oral Language Style. Both have proven successful as methods of analysis; the precise methodology as well as the supporting statistical data may be found in a previous publication by the investigator.[1]

## An Empirical Method of Determining Language Proficiency

This particular method of analysis is still in the tentative stages of development. A Summary Sheet such as the following model would be completed for each child. Once this had been accomplished, it would then be possible to determine which features of language were contributing the most consistent scores and which features were erratic and out-of-keeping with the other scores on the sheet. Gradually the list of language features at the left-hand side of the sheet would be changed as weak, inconsistent features were eliminated, and strong, consistent features were retained.

---

[1] Walter Loban, The Language of Elementary School Children (Champaign, Illinois: National Council of Teachers of English, 1963).

## Model Summary Sheet[1]

Subject's Name: John X. Socio-Economic Rating III

| Language Feature | Standard Score<br>(Z-score above or below the mean) |
|---|---|
| Length of communication unit (oral) | + 7 |
| Length of communication unit (written) | + 3 |
| Number of subordinate clauses of concession, condition, purpose, manner, result, and comparison | +12 |
| Amount of subordination (non-finite verbs) | + 6 |
| Number of relational words (subordinating connectors) | + 1 |
| Number of words in movable positions | + 4 |
| Use of modals and aspect in complex verb phrases | + 9 |
| Use of passive voice | 0 |
| Number of words used for elaborating communication units | +16 |
| Freedom from mazes (oral) | + 2 |
| Freedom from gross nonstandard English usage (oral) | + 8 |
| Number of original metaphors | - 2 |
| Ratio of finite and non-finite verbs to remainder of words in communication units | + 6 |
| Rating on written compositions | + 4 |
| TOTAL | +76 |

---

[1] The language features presented on the Model Summary Sheet are subject to change depending upon what is learned in preliminary tests of the method. The reader will note that Z-scores (standard scores) are a way of equating the distribution of scores on the various language features. Each language feature is treated separately by the Z-scores technique with the mean arbitrarily listed as 50 and each standard deviation away from the mean taken as 10 points. By use of this technique we can then add the Z-scores to obtain a total for each subject. Each of us has undoubtedly had a grammar school teacher who told him that it is simply not possible to add apples to oranges. By use of the Z-score technique we actually obtain an abstract number which makes this possible.

Of particular importance would be a special study to determine whether or not a few language features actually serve to discriminate language proficiency just as well as the complete list on the Summary Sheet. If this proved to be the case, tests of language proficiency could then be standardized, the use of teachers' ratings would become a validating factor rather than a method of selection, and we shall have arrived at a relatively simple, inexpensive method for objectively measuring each individual student's ability to use language.

## The Amount of Subordination

Subordination is typically a more mature and difficult form of syntactical structure than simple parallel statements connected by and or but. Furthermore, subordination makes possible a more coherent organization of related statements. Usually one thinks of dependent clauses when subordination is mentioned, but prepositional, participial, infinitive, and gerund phrases, as well as dependent clauses, are syntactical strategies for classifying thought relationships; through them, speakers communicate more complex propositions than are usually possible with simple independent clauses.

Some measure or index of subordination should reveal a difference between subjects proficient with language and those who are not. LaBrant was probably the first researcher to analyze subordination by a clearly defined series of rules.[1] She studied clauses as indications of skill in written language and developed a subordination index, dividing the number of subordinate clauses by the total number of clauses in each subject's writing. Thus her subordination index is the percentage of dependent clauses among all the clauses written by an individual. Her index does not take into account any subordinating accomplished by infinitives, participles, and gerunds, whether these non-finite verbs be single or in phrases. In other words, her formula deals only with finite verbs and does not include the non-finite verbs (infinitives, participles, gerunds) or any other subordinating syntactical methods such as prepositional phrases, nominative absolutes, and appositives. Following LaBrant several studies added to the body of knowledge on subordination.[1]

---

[1] In LaBrant's research a subordinate clause which modifies an independent element of the communication unit is termed "first-order subordination." Subordination which modifies another subordinate element, which in turn modifies an independent element, is called "second-order subordination." Lou LaBrant, "A Study of Certain Language Developments of Children in Grades 4-12 Inclusive," Genetic Psychology Monographs, 14:5 (1933), pp. 387-491.

Another index of clausal subordination has emerged from the recent research of Kellogg Hunt.[2] This, too, is based upon writing and restricted to finite verbs, but it is computed differently. Hunt divides the number of main clauses plus subordinate clauses by the number of main clauses.

| LaBrant | Hunt |
|---|---|
| $\frac{\text{Number of subordinate clauses}}{\text{Subordinate plus main clauses}}$ | $\frac{\text{Subordinate plus main clauses}}{\text{Main clauses}}$ |

Neither of these indexes deals with non-finite verbs or other methods of subordinating. Many scholars conceive of "subordination" as being only that of finite verbs, but this seems an unnecessary and narrowing concept of what subordinating actually is in human communication.

The ability to express natural or logical relations, however, does not depend solely upon finite verbs. Analysis of proficient speakers and writers reveals skillful use of prepositional phrases, infinitives, appositives, gerunds, and other strategies of structure to compress ideas into more mature, meaningful forms. Therefore, valuable pioneering though it was, the LaBrant index of subordination remains nevertheless an incomplete method of analyzing the structural complexity used by speakers and writers for density and compression of thought. Mature speaks and writers also replace dependent clauses with phrases of all kinds, as in these examples:

---

[1] M. V. Bear, "Children's Growth in the Use of Written Language," *Elementary English Review*, 16 (1939), pp. 312-319.

F. K. Heider and G. M. Heider, "A Comparison of Sentence Structure of Deaf and Hearing Children," *Psychological Monographs*, 52:1 (1940), pp. 42-103.

[2] Hunt, *op. cit.*

| *Less Mature* | *More Mature* |
|---|---|
| When Nina had fed the baby, she hurried after her father. | Having fed the baby, Nina hurried after her father. (Present perfect participle) |
| Literature is written so that it can clarify the real world. | Literature is written to clarify the real world. (Infinitive phrase) |
| The dog was in such a wild fury that he bit his master. | In his wild fury the dog bit his master. (Prepositional phrase) |

The function of clauses may also reveal degrees of proficiency in language. Templin found that subjects age eight use five times as many subordinate clauses as subjects age three, but the difference varies according to type of clause:[1] the eight-year-old subjects use only four times as many adverb clauses, compared with seven times as many noun clauses and twelve times as many adjective clauses for the three-year-old subjects. Evidently the ability to use adjective clauses is a later stage of development, and Templin's research shows a way toward establishing stages of development in language. Lawton's research also shows that socio-economic differences in the use of the adjective clause are apparent at age twelve, but by age fifteen the working-class boys have caught up with the middle-class boys. Noun clauses used as objects are very common and are learned early in life, but noun clauses used as nominals (subjects, complements, and appositives) are much later developments, and some subjects in Lawton's research do not develop them very well at all.[2]

Although clauses are often a less skillful syntactic strategy than verbal clusters in the *writing* of expert stylists, they do prove to be a sign of language proficiency in the speech and writing of the subjects in this longitudinal study. Included in any study of these amplifying clusters should be a count of the number of words in them. In this research, this has not been done as yet, but it is important to note that Hunt found the increase in length of communication units related to *length of dependent clauses*.[3]

---

[1] Mildred C. Templin, *Certain Language Skills in Children* (Minneapolis, Minnesota: University of Minnesota Press, 1957).

[2] Denis Lawton, "Social Class Differences in Language Development: A Study of Some Samples of Written Work," *Language and Speech*, Vol. 6, Part 3 (1963), pp. 120-143.

[3] Hunt, *op. cit.*

In the early years of this longitudinal study, the investigator devised a weighted index of subordination that permitted a limited place to non-finite verbs. This index tallied all dependent clauses as follows:[1]

1 point for each dependent clause (first-order dependent clauses)
2 points for any dependent clause modifying or within another dependent clause (second-order dependent clauses)
2 points for any dependent clause containing a verbal construction such as an infinitive, gerund, or participle
3 points for any dependent clause within or modifying another dependent clause which, in turn, is within or modifies another dependent clause (third-order dependent clauses)

The reader should note that only if non-finite verbs or verb phrases occurred within a dependent clause was any notice taken of them. Non-finite verbal structures outside the dependent clause were ignored as were prepositional phrases, yet these are also powerful structural means of subordinating ideas. Even so, this limited weighted index of subordination revealed that subjects high in language proficiency scored higher than a random group of subjects or a group low in language proficiency, and all three groups showed an increase on the index as chronological age increased. However, this particular index, because of the limitations described, needs to be replaced by a better index.

In England, Lawton became convinced by studies of social class differences in language that maturity of expression is marked not only by an increase in the frequency of use of subordinate clauses but also in the complexity of their structuring. He states: "Several attempts have been made to measure this kind of complexity, and it was decided to employ Loban's weighted index of subordination, which has the merit of taking some non-finite constructions into account as well as finite. The results . . . show clearly that the ability to use subordinations of greater complexity than the first order dependence may be an index of age development but that class differences are once again more important. . . . It is felt, however, that although important differences have been indicated the measures used are linguistically very crude and are not a satisfactory method of carrying on investigations of any greater complexity. It would seem to be essential that future research in this field should be carried out using the methods of modern linguistics rather than trying to adapt the old-fashioned categories of conventional grammar."[1]

---

[1] Walter Loban, The Language of Elementary School Children (Champaign, Illinois: National Council of Teachers of English, 1963).

As a result of all these studies, two possibilities for studying subordination are being considered in the present research. The first of these is a more comprehensive weighted index of subordination, one that will extend beyond the finite verb of the dependent clause. The second possibility is the use of transformational grammar to assess subordination. Each of these two possibilities will be discussed in turn.

## The New Weighted Index of Subordination

This new index will be called an Elaboration Index because it will be computed for each communication unit and represent ways in which the basic subject and predicate of each independent clause are elaborated into a more complex structure.

1 point for each adverb or adjective, single participle, single infinitive, or single gerund (ones that are not in phrases or clauses)
2 points for each prepositional phrase, participial phrase, gerund phrase, or infinitive phrase
4 points for each dependent clause and each infinitive clause
5 points if the dependent or infinitive clause is embedded in or modifies another dependent clause (second-order)
6 points if the dependent or infinitive clause is embedded in or modifies another dependent clause that is itself already embedded in or modifying still another dependent clause (third order)
2 points for each appositive
3 points for each deeply complicated appositive--an appositive with a verb or verbal in it
2 points for each nominative absolute

If a dependent clause modifies a word in a phrase (It's about a slave boy who had no parents), count 2 for the phrase and 4 for the clause; nothing extra added for this structure.

## The Use of Transformational Grammar to Assess Subordination

Analysis of subordination by transformational grammar may possibly accomplish the same goal with more methodological precision. Complex sentences are made up or generated from several source sentences. The matrix sentence, or independent clause, has embedded in it--grafted onto it--a number of other sentences; particularly important is the fact that some transformations will have deletions, becoming participles or gerunds, for instance; they, too, would be counted just as is everything that is nested into the main kernel sentence.

---

[1] Lawton, op. cit., p. 138.

Although the two analyses just described have not been carried out as yet, other elements of subordination have been studied. Using the High, Low, and Random groups, the researcher has taken thirty communication units from the same place in each subject's transcript, at a point where the subject's flow of language is most fluent and uninterrupted. These language samples for grades six, eight, ten, and twelve have been analyzed for the following features:

The number and kind of dependent clauses
The function of noun clauses
The types of adverb clauses
Sentence patterns
Kellogg Hunt's average number of clauses per communication unit

## Structural Dislocations in Oral Language

Like subordination, the study of mazes, hesitations, and false starts has been difficult to develop systematically. These tangles of words and sudden shifts in direction of thought certainly give every evidence of constituting an important subject for research in oral language. In writing, where the writer is separated from his reader, such false starts and incoherences are less likely to occur and, if they do occur, are crossed out and revised. The very nature of oral language, in which a speaker can easily modify his communication, shift to a new approach, or add qualifications to a thought, encourages structural dislocations many of which end up as mazes rather than grammatical structures.

In this research, experimentation with systems of classifying these hesitations and false starts is still in process. At the present there has been a definitional change on one particular type of maze. The reader should note this point carefully since the change in analysis alters the statistical findings on mazes as they relate to the High, Low, and Total groups of subjects in a previous monograph.[1] The following four examples illustrate the type of oral language that has previously been considered a maze but is now classified as a false start rather than a maze.[1] In the examples shown below, a maze as presently treated has been set off in brackets; a false start as presently treated has been underlined.

---

[1] Walter Loban, The Language of Elementary School Children (Champaign, Illinois: National Council of Teachers of English, 1963), pp. 28-33.

1. *I was sick for about two da--* I was in the hospital for two weeks.
2. [I was] *I was sick for about two da--* I was in the hospital for two weeks.
3. [I was] *I was sick* [for] *for about two da--* I was in the hospital for two weeks.
4. [I was uh I was sick uh for uh for two d-da- week--] I was in the hospital for two weeks.

| *Previous Treatment*[2] | *Present Treatment*[2] |
|---|---|
| ⑦ - 8 | △7 - 8 |
| ⑨ - 8 | ② - △7 - 8 |
| ⑩ - 8 | ② - △3 - ① - △4 - 8 |
| ⑫ - 8 | ⑫ - 8 |

In the last example shown above the subject is obviously too confused to be considered as speaking coherently; thus *past and present treatment are identical*.

## Difficulties with Conventional Usage and Grammar

In earlier studies on nonstandard usage and grammar, the research carried out was done on the written language of the subjects rather than on their oral language.[1] As a result it was necessary to modify certain categories; and in a few cases such as punctuation, spelling, and capitalization, the categories were completely eliminated.[2]

---

[1] Note also that the present treatment often *increases* the number of *mazes* while *simultaneously decreasing* the words in mazes.

[2] A circled number such as ⑦ = 7 maze words.
A triangular number such as △7 = 7 false-start words tallied with words in units.
A regularly printed number such as 8 = words in the unit.

In the present investigation a total of 21 categories of nonstandard usage and grammar have been identified. Each of these has been studied in detail for the entire thirteen-year period, using four special subgroups designated as High Caucasian, Low Caucasian, Low Negro and Random. An explanation of each category as well as illustrative examples will be presented at a later point in this monograph together with further details on methodology and statistical findings.

## Scales Developed during the Course of this Investigation

The two most notable scales developed during the course of the investigation are the teacher's rating scale and the index of writing ability.

### The Teacher's Rating Scale

This particular scale has actually been discussed in detail in the section of this monograph titled The Data Collected. The purpose here is merely to note that in addition to its providing the statistical basis on which the High and Low groups were selected, the teacher's rating scale is a general scale that may easily be adapted to other research.

### The Index of Writing Ability

The index of writing ability is a scale developed and refined by the investigator during the course of the research. The initial purpose was to provide a guide by which two judges, both teachers of English, could rate the compositions of each subject in the study. The two judges were given the following set of directions:

---

[1] W. W. Charters, "Minimum Essentials in Elementary Language and Grammar, A Second Report," 16th Yearbook of the National Society for the Study of Education, Pt. I (Chicago: NSSE, 1917).

L. J. O'Rourke, Rebuilding the English Curriculum: A Report of a Nationwide Study of English (Washington: The Psychological Institute, 1934).

[2] To date the investigation has focused only on the oral language of the subjects. When the analysis is extended to the subjects' written language, categories such as punctuation, spelling, and capitalization will be included.

(1) Review the writing scale thoroughly and keep a copy of it at your desk when reading the subjects' compositions.

(2) Note that the items in the scale are not intended to weigh equally. You should consider the relationship of any single element in the composition to the whole; vary the weight of any given element according to the way the subject has succeeded in using it in combination with other elements.

(3) Note further that the items in the scale which are marked by an asterisk (*) are most likely to be the crucial items.

(4) Read each composition a number of times in order to gain a genuine impression of the subject's writing ability. This will also help you to more easily weigh the various elements in relation to each other.

(5) When you are ready to rate the composition, assign *a single Arabic numeral from 1 to 10 in accordance with this guide*.

(6) Note that the subject's name has been folded down in order to eliminate any subjective judgment on your part. Place your rating at the top of the paper and then refold it so that the second judge may see neither the subject's name nor the rating you have assigned to the composition.

## INDEX OF WRITING ABILITY

### I *SUPERIOR* -- *10, 9*

*... Has a clear thesis statement, stated or clearly implied, and the composition supports this statement.

*... Has a consistent and appropriate point of view.

*... Organizes his ideas; a definite plan is apparent.

*... Achieves clarity of content.

*... Has proportion, development, and completeness.

*... Uses well-constructed sentences--clear, idiomatic, and typical of accepted usage.

*... Uses relational (transitional) words (*yet*, *however*, *since*, etc.), to bridge the parts of his writing.

... Employs a variety of sentence arrangements suitable to his intention.

... Uses a variety of phrases and clauses, moving them about to achieve greater effectiveness.

... Gives a setting, often indicating time and place.

... Includes a title which indicates the unity of the content.

... Employs vigorous verbs.

... Employs a vivid, picture-evoking vocabulary, specific rather than general (precise words).

... Displays imaginative or creative power through some method such as figurative language, irony, notable style, or unusual interpretation that is not irrational.

... Uses conventional spelling, punctuation, and capitalization.

II HIGH AVERAGE -- 8, 7

*... Begins to organize, but the basis of organization is not firm enough to control the material completely.

*... Uses a few relational words, but not enough to give smoothness.

*... Tends to generalities rather than specificity.

*... Gives obvious rather than fresh or original interpretation.

... Uses limited sentence variety.

... Displays ordinary vocabulary.

... Uses reasonably appropriate spelling, punctuation, and capitalization.

III LOW AVERAGE -- 6, 5

*... Makes little or no attempt to organize or shows inadequate awareness of his basis for organization.

... Uses no relational words.

... Employs weak or faulty sentence structure, indicating lack of understanding of sentence construction.

... Employs a limited vocabulary.

III LOW AVERAGE -- 6, 5 (continued)

... Tends to be fragmentary, or, in longer writing, disjointed or formless.

... Gives no interpretation or at best an unrelated or weak one; interprets only the obvious, barely achieving interpretation.

... Uses poor spelling and faulty punctuation.

IV MARGINAL -- 4, 3

... Achieves chiefly incomplete, incoherent, or meaningless expressions.

... Employs occasional groups of related words.

... Fails to complete some words.

... Uses lists of words related to the subject.

... Uses barely comprehensible spelling.

V ILLITERATE -- 2, 1

... Resorts to pictures or drawings.

... Uses meaningless symbols or tangles of letters.

... Lists words either unrelated or only partially related to the subject.

The reader should note that after each judge has rated a given composition, two separate Arabic numbers will have been assigned to the composition (each number from 1 to 10 as per the instructions). The final step is to combine these two numbers and arrive at a Roman numeral designation from I to V (Superior to Illiterate). However, this step is not a simple averaging process. If the ratings of both judges fall within one of the Roman numeral categories, the subject is assigned that rating. In cases where there is disagreement--where the combined judgment crosses from one Roman numeral category to another, a third judge reads the composition in question; the rating assigned represents the agreement of two out of three people acting as judges. During the course of the investigation the two judges were in agreement in approximately 95 per cent of the cases. Thus a third judgment was necessary on only about 5 per cent of the compositions.

Once each composition had been assigned a final rating, these ratings were then used to compare the High and Low groups to the

Total group as well as to obtain findings on writing ability as it relates to such features as reading scores, oral language ability, and socio-economic status.

## Tests Derived from Other Research

During the course of the research, the investigator made use of three tests which were developed by other research workers and which deserve particular mention. These are (1) a test of subordinating connectives, (2) a kindergarten vocabulary test, and (3) a personality inventory designed to measure attitudinal dimensions such as aesthetic, theoretic, and prudent.

### A Test of Subordinating Connectives

This particular test was actually discussed in the section of the monograph titled *The Data Collected*. The purpose here is simply to point out that it was derived from a multiple-choice test devised by A. F. Watts.[1]

In the present research, scores on this test make it possible to compare the High and Low groups to the Total group as well as to determine the degree to which socio-economic status may be responsible for the ability to correctly use subordinating connectives such as *however*, *moreover*, and *although*.

### The Kindergarten Vocabulary Test

The Kindergarten Vocabulary Test is actually the third aspect of the present investigation which was based on the work of A. F. Watts, the British researcher.[2] The design of the test, together with the age level of the subjects, makes it necessary to administer the test orally to each individual. In the present investigation this was done in the latter part of the kindergarten year.

The Kindergarten Vocabulary Test contains 100 items, each in the form of a question posed by the interviewer. Typical of the

---

[1] Watts, *op. cit.*, pp. 302-305.

[2] As indicated previously, Watts' "natural linguistic unit" was the inspiration for defining the communication unit, even though the structural form rather than Watts' semantic form became the eventual test of a communication unit.

questions are those in which the interviewer asks, "What am I touching?" as he places his finger on his nose, eyebrows, or elbow. In some cases it was necessary to change a British item such as *teahouse* to an *American version* such as *restaurant* or *café*.[1] A frequency distribution together with statistical details on the Kindergarten Vocabulary Test will be found in a later section titled *A Statistical Description of the Sample*.

### The Personality Inventory

The personality inventory used in this research was designed by T. Bentley Edwards of the School of Education at the University of California in Berkeley.[2] The inventory contains a total of 72 items, each of which may be answered in any of six ways ranging from strongly agree to strongly disagree. The end result of the test is to obtain six scales of attitudinal dimensions such as *prudent-immediate* or *theoretic-aesthetic* which may then be compared to such features as the subject's writing scores, his average words per communication unit, or his socio-economic status. In the present research, this personality inventory was given to each subject in grade eleven.

---

[1] The British version of the test may be found in Watts' book, *The Language and Mental Development of Children, op. cit.*, pp. 280-283.

[2] A complete copy of the inventory as well as information on its development and uses may be found in the following publications:

T. Bentley Edwards and Alan B. Wilson, "Attitudes toward the Study of School Subjects," *Educational Theory*, VIII: 4 (1958), pp. 275-284.

T. Bentley Edwards and Alan B. Wilson, "The Development Scales of Attitudinal Dimensions," *Journal of Experimental Education*, VIII: 1 (1959), pp. 3-36.

# PART III. A STATISTICAL DESCRIPTION OF THE SAMPLE

## A Brief Statement about the Sample

As indicated earlier in this monograph, the investigator used a stratified sample of 338 subjects to represent a cross-section of children who were then (in 1953) entering the public school system of Oakland, California. The bases for selection were stated to be sex, ethnic background, socio-economic status, and spread of intellectual ability. In the following paragraphs each of these will be discussed in turn.

## Sex, Ethnic Background, and Socio-Economic Status

To simplify the presentation of statistical data, it would be best to look first at the method for classifying the subjects according to socio-economic status. For all subjects in this research, the occupations of both parents (or of legal guardians) were determined, and these occupations were then classified according to the Minnesota Scale for Paternal Occupations.[1]

In the present investigation the socio-economic ratings were carried out by two judges, and in cases of disagreement (which were actually negligible) the investigator himself provided a third judgment.[2] Once the ratings were finalized, the subjects then fell into one of the seven major categories comprising the Minnesota Scale:

I Professional

II Semi-professional and managerial

III Clerical, skilled trades, and retail business

---

[1] The Minnesota Scale was developed at the Institute of Child Welfare, University of Minnesota, as a basis for classifying persons into socio-economic groups at a time when the Institute was looking for an instrument which would enable it to secure a cross-section of the population. (See The Minnesota Scale for Paternal Occupations, Institute of Child Welfare, University of Minnesota, University Press, n.d.)

[2] The Minnesota Scale contains approximately 500 occupations rated on a seven-point scale. Subjective judgments were thus held to a minimum.

IV (The Minnesota Scale reserves this category for all farmers.)

V Semi-skilled occupations, minor clerical positions, and minor business.

VI Slightly skilled trades and other occupations requiring little training or ability.

VII Day laborers of all classes.

The reader will note that the present study is an all-urban sample. This would seem to imply that no subjects would fall into category IV (farmers). However, this was not actually the case since the socio-economic ratings in the present study reflect the average of both parents' occupations.[1]

Of the 338 subjects initially in the study, 156 were male and 182 were female. The age range of the subjects was 5.0 to 5.9 years, and the ethnic breakdown was Caucasian (62.4%), Negro (32.0%) and Oriental (5.6%). However, for the purpose of making a socio-economic comparison of the subjects in an early year as opposed to a late year of the study, grade three has been compared to grade twelve, rather than attempting to use the data obtained at kindergarten.[2] The actual number of subjects at grade three and grade twelve are shown in Table 1; Table 2 presents the same data in per cent.

---

[1] Typically a socio-economic rating of IV was the result of a mother who was a skilled clerical worker (III) and a father who was a semi-skilled factory worker (V), resulting in the average of IV as the family socio-economic rating.

[2] The decision to use grade three was based on the vagueness many young children exhibit about parental occupations. When a child in kindergarten says that his father works in a bank, he may be implying anything from the fact that his father is on the night janitorial staff to his being an important executive in charge of the entire operation. By grade three, school records were of assistance in verifying the parents' occupations, and most subjects were more aware of the actual work done by their parents.

## TABLE 1

## SOCIO-ECONOMIC STATUS BY SEX AND ETHNIC GROUP
(Actual Number of Subjects)

### Grade Three

| Sex and Ethnic Group | Socio-Economic Status | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | I | II | III | IV | V | VI | VII | Total |
| Caucasian Boys | 17 | 19 | 18 | 9 | 9 | 0 | 1 | 73 |
| Caucasian Girls | 13 | 21 | 19 | 2 | 11 | 10 | 1 | 77 |
| Negro Boys | 0 | 3 | 4 | 5 | 9 | 16 | 4 | 41 |
| Negro Girls | 0 | 0 | 2 | 6 | 13 | 19 | 14 | 54 |
| Oriental Boys | 0 | 0 | 1 | 1 | 4 | 1 | 1 | 8 |
| Oriental Girls | 0 | 2 | 0 | 1 | 7 | 0 | 0 | 10 |
| Total | 30 | 45 | 44 | 24 | 53 | 46 | 21 | 263 |

### Grade Twelve

| Sex and Ethnic Group | Socio-Economic Status | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | I | II | III | IV | V | VI | VII | Total |
| Caucasian Boys | 14 | 14 | 11 | 8 | 6 | 0 | 0 | 53 |
| Caucasian Girls | 11 | 16 | 12 | 1 | 7 | 7 | 1 | 55 |
| Negro Boys | 0 | 3 | 4 | 4 | 7 | 16 | 4 | 38 |
| Negro Girls | 0 | 0 | 1 | 6 | 13 | 17 | 11 | 48 |
| Oriental Boys | 0 | 0 | 1 | 1 | 4 | 1 | 1 | 8 |
| Oriental Girls | 0 | 1 | 0 | 1 | 7 | 0 | 0 | 9 |
| Total | 25 | 34 | 29 | 21 | 44 | 41 | 17 | 211 |

## TABLE 2

## SOCIO-ECONOMIC STATUS BY SEX AND ETHNIC GROUP
(In per cent)

### Grade Three

| Sex and Ethnic Group | Socio-Economic Status | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | I | II | III | IV | V | VI | VII | Total |
| Caucasian Boys | 6.47 | 7.23 | 6.85 | 3.42 | 3.42 | 0.00 | 0.38 | 27.77 |
| Caucasian Girls | 4.94 | 7.98 | 7.23 | 0.76 | 4.18 | 3.80 | 0.38 | 29.27 |
| Negro Boys | 0.00 | 1.14 | 1.52 | 1.90 | 3.42 | 6.08 | 1.52 | 15.58 |
| Negro Girls | 0.00 | 0.00 | 0.76 | 2.28 | 4.96 | 7.22 | 5.32 | 20.54 |
| Oriental Boys | 0.00 | 0.00 | 0.38 | 0.38 | 1.52 | 0.38 | 0.38 | 3.04 |
| Oriental Girls | 0.00 | 0.76 | 0.00 | 0.38 | 2.66 | 0.00 | 0.00 | 3.80 |
| Total | 11.41 | 17.11 | 16.74 | 9.12 | 20.16 | 17.48 | 7.98 | 100.00 |

### Grade Twelve

| Sex and Ethnic Group | Socio-Economic Status | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | I | II | III | IV | V | VI | VII | Total |
| Caucasian Boys | 6.65 | 6.65 | 5.21 | 3.79 | 2.84 | 0.00 | 0.00 | 25.14 |
| Caucasian Girls | 5.21 | 7.59 | 5.70 | 0.47 | 3.31 | 3.31 | 0.47 | 26.06 |
| Negro Boys | 0.00 | 1.42 | 1.90 | 1.90 | 3.31 | 7.59 | 1.90 | 18.02 |
| Negro Girls | 0.00 | 0.00 | 0.47 | 2.84 | 6.16 | 8.07 | 5.21 | 22.75 |
| Oriental Boys | 0.00 | 0.00 | 0.47 | 0.47 | 1.90 | 0.47 | 0.47 | 3.78 |
| Oriental Girls | 0.00 | 0.47 | 0.00 | 0.47 | 3.31 | 0.00 | 0.00 | 4.25 |
| Total | 11.86 | 16.13 | 13.75 | 9.94 | 20.83 | 19.44 | 8.05 | 100.00 |

Looking at Tables 1 and 2, one can see that the sample contains a good cross-section of subjects by both sex and ethnic group. Caucasians tend to be centered in the higher socio-economic groups whereas the lower socio-economic categories contain mainly Negro subjects. In addition, the median socio-economic status for the Total group of subjects is in the center of the Minnesota Scale (IV) for both grade three and grade twelve which is precisely what one would expect taking a cross-section of an ethnically mixed urban population. The total in each category changes very little from grade three to twelve.

Also of significance is the fact that the Caucasian-Negro ethnic ratios are very close to what one would expect in a typical city in the present-day United States. At grade three the study contained approximately 57 per cent Caucasian and 36 per cent Negro subjects; at grade twelve the ratio was 51 per cent to 41 per cent. This, of course, represents a higher proportion of Negro subjects than exist in the United States as a whole, and for some aspects of this research, the number of Negro subjects needs to be reduced by using a table of random numbers to eliminate those beyond the national Negro population (approximately 11 per cent).

This change in the ethnic ratios is actually of considerable interest in itself. The implication which seems most obvious is that those of low socio-economic status (very often Negro) tend to be mobile within a given geographic area whereas those of higher socio-economic status (usually Caucasian) tend to extend their mobility to a point where they are actually lost to the study.

One further item of interest is that to some degree the method of presenting the data in Tables 1 and 2 actually tends to obscure the true socio-economic differences between the Negro and Caucasian subjects. Breaking down the data by sex makes each percentage appear smaller, and the differences are further obscured by calculating each subgroup as a percentage of the Total group.

In Table 3 this tendency to obscure the data has been rectified by considering the Caucasian group and the Negro group to be separate entities, each composed of 100 per cent of their own members. In this table the gigantic discrepancy in socio-economic status may be seen easily: 70 per cent of the Caucasian subjects are in the highest three socio-economic categories whereas 80 per cent of the Negro subjects are in the lowest three categories.

## TABLE 3

## SOCIO-ECONOMIC STATUS OF CAUCASIAN AND NEGRO SUBJECTS
(Treating Each Group as a Separate Entity)

### Grade Three

| Socio-Economic Status | Caucasian |  | Negro |  | Total[1] |  |
|---|---|---|---|---|---|---|
|  | N | % | N | % | N | % |
| I | 30 | 20.00 | 0 | 0.00 | 30 | 11.41 |
| II | 40 | 26.67 | 3 | 3.16 | 45 | 17.11 |
| III | 37 | 24.67 | 6 | 6.32 | 44 | 16.73 |
| IV | 11 | 7.33 | 11 | 11.58 | 24 | 9.13 |
| V | 20 | 13.33 | 22 | 23.16 | 53 | 20.15 |
| VI | 10 | 6.67 | 35 | 36.83 | 46 | 17.49 |
| VII | 2 | 1.33 | 18 | 18.95 | 21 | 7.98 |
| Total | 150 | 100.00 | 95 | 100.00 | 263 | 100.00 |

### Grade Twelve

| Socio-Economic Status | Caucasian |  | Negro |  | Total[1] |  |
|---|---|---|---|---|---|---|
|  | N | % | N | % | N | % |
| I | 25 | 23.15 | 0 | 0.00 | 25 | 11.85 |
| II | 30 | 27.77 | 3 | 3.49 | 34 | 16.11 |
| III | 23 | 21.30 | 5 | 5.81 | 29 | 13.74 |
| IV | 9 | 8.33 | 10 | 11.63 | 21 | 9.95 |
| V | 13 | 12.04 | 20 | 23.26 | 44 | 20.86 |
| VI | 7 | 6.48 | 33 | 38.37 | 41 | 19.43 |
| VII | 1 | 0.93 | 15 | 17.44 | 17 | 8.06 |
| Total | 108 | 100.00 | 86 | 100.00 | 211 | 100.00 |

---

[1] The total group includes the Oriental subjects in the study.

Spread of Intellectual Ability

The initial testing device designed to measure vocabulary might also be viewed as a rough measure of intellectual ability. As indicated previously, the Kindergarten Vocabulary Test contained 100 items and was administered to each subject in the latter part of the kindergarten year.[1] For the Total group, the scores ranged from 3 to 83; the mean was 50.46 and the standard deviation, 15.35; a frequency distribution for the Total group is presented graphically in Figure 1. Looking at Figure 1, one can see that the frequency distribution is a rough approximation of a normal curve. In other words the range, the mean, and the standard deviation support the hypothesis that in terms of vocabulary the subjects in the study represent a good cross-section of a larger universe of children.

As the study progressed, it became possible to obtain from the schools a succession of I.Q. scores on each subject in the study. For the group as a whole, a total of 809 separate Kuhlman-Anderson scores were available. This test was by far the most frequently given, and the decision to limit the presentation to Kuhlman-Anderson tests was made to eliminate the use of conversion tables which might possibly produce an element of non-comparability.

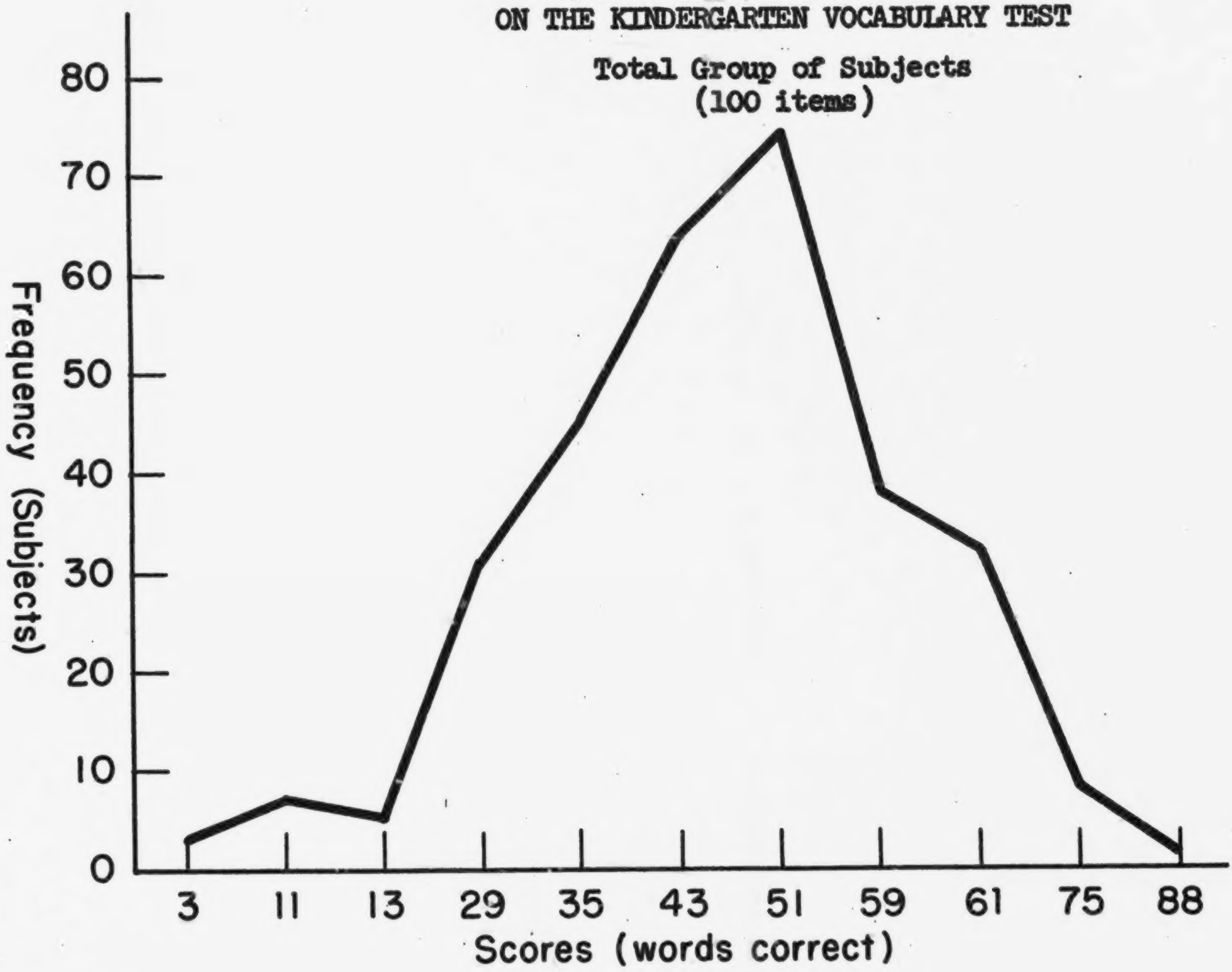
---

[1] The N for the test was actually 320 rather than 338. The discrepancy was the result of absences and other difficulties. The investigator was financing the research personally and did not have time or finances for many return trips to schools spread over a large area.

FIGURE 1

FREQUENCY DISTRIBUTION OF SCORES
ON THE KINDERGARTEN VOCABULARY TEST

Total Group of Subjects
(100 items)



In addition it should be noted that each subject generally had three or four separate Kuhlman-Anderson I.Q. tests--the first usually administered in grade two and the remainder spread through the next four or five years of his schooling. For each subject, all of his individual Kuhlman-Anderson I.Q. test scores were first added and averaged before using this final average I.Q. in the compilation of tables and graphs.

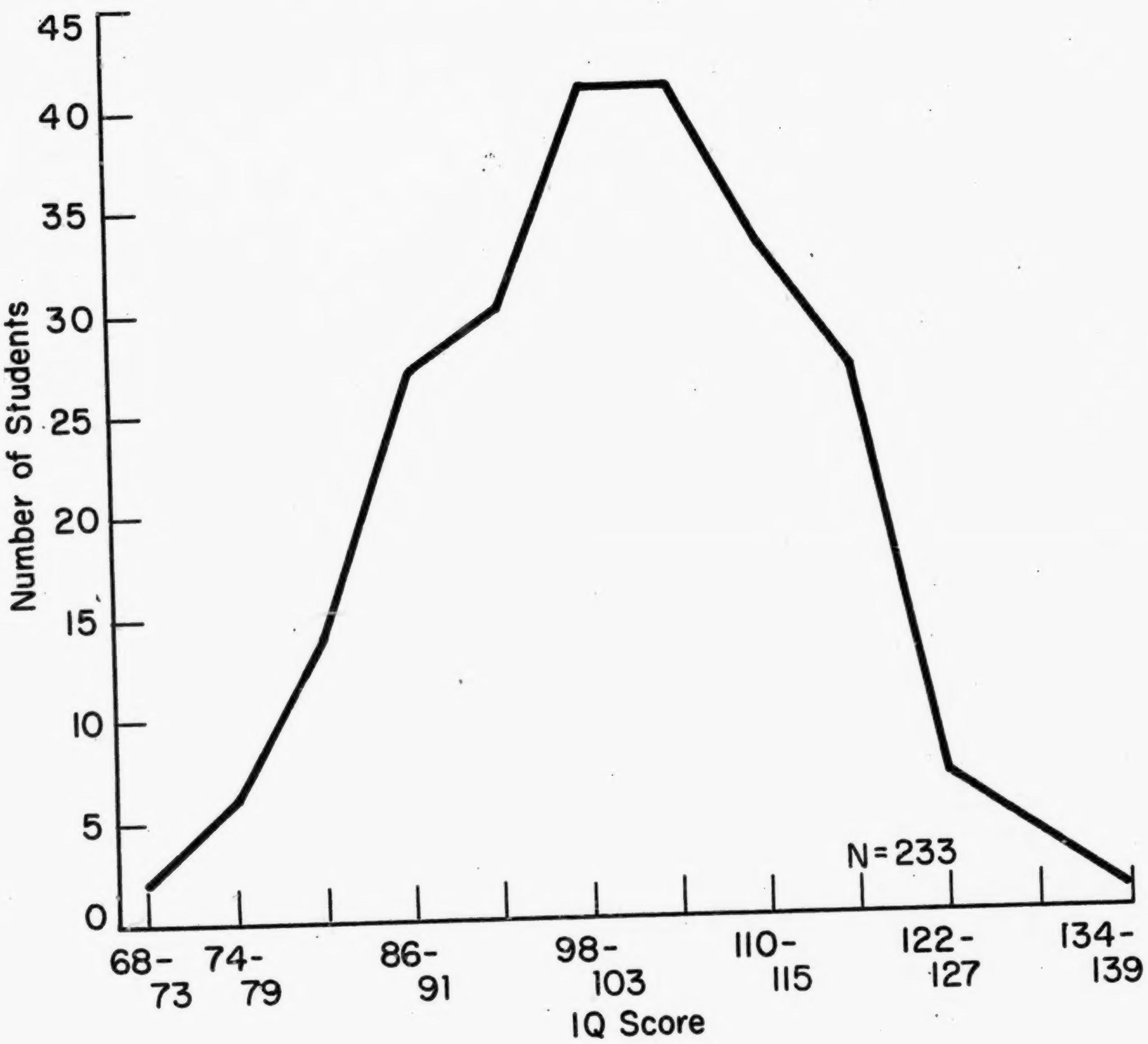
Figure 2 presents a frequency distribution of these individually averaged I.Q. scores. Again, just as in the frequency distribution of the Kindergarten Vocabulary Test, the data on I.Q. indicate that the Total group of subjects approximates the bell-shaped normal curve one expects in a true cross-section of the population.

On the question of I.Q. as it relates to ethnic group and socio-economic status, it can be seen in Table 4 that for the Caucasian group, I.Q. and socio-economic status seem very definitely related; the median I.Q. decreases consistenty with the decrease in socio-economic status. For the Negro group, however, the pattern seems more erratic, indicating that the relationship between median I.Q. and socio-economic status is less clearly defined for the Negro subjects than it appears to be for the Caucasian subjects.

FIGURE 2

FREQUENCY DISTRIBUTION OF KUHIMAN-ANDERSON I.Q. SCORES

Average Scores for Each Subject[1]



---

[1] For each individual subject, his succession of Kuhlman-Anderson I.Q. scores was first added and averaged before being used in the frequency distribution.

TABLE 4

I.Q. BY SOCIO-ECONOMIC STATUS AND ETHNIC GROUP
(Average Scores on Kuhlman-Anderson I.Q. Tests)

| | Caucasian | | | Negro | | |
|---|---|---|---|---|---|---|
| Socio-Econ. Status | Number of Subjects[1] | Median I.Q. | Range | Number of Subjects[1] | Median I.Q. | Range |
| I | 28 | 115 | 98 to 135 | -- | --- | -- |
| II | 37 | 109 | 86 to 129 | 3 | 102 | 91 to 117 |
| III | 30 | 108 | 86 to 128 | 6 | 96 | 81 to 107 |
| IV | 9 | 103 | 89 to 114 | 11 | 104 | 86 to 114 |
| V | 16 | 100 | 74 to 119 | 20 | 90 | 79 to 116 |
| VI | 8 | 102 | 80 to 119 | 31 | 90 | 68 to 112 |
| VII | -- | --- | -- | 16 | 95 | 82 to 114 |

[1] The reader should bear in mind that in several of the categories the N is too low to be of significance.

## Increasing Statistical Reliability

In any research, regardless of the field of study or the precise nature of the problem being investigated, it is essential that the sample population be representative of the larger universe and that the methodology applied be clear and straightforward and thus able to be replicated by other investigators for the purpose of verification or refutation. Even when these first two goals have been met, however, the question which still remains is whether or not the findings of the research contain a degree of *statistical reliability* which makes possible definitive statements about the problem being studied.

In the present research all judgments and classifications have been made by two or more highly qualified research workers, each specially trained and each with prior educational competence in the area being studied. Judgments have been checked by the formula Lewin and his colleagues first used in their comparison of the Boy Scouts of America with the Hitler Youth Movement.[1] This formula, shown below, may be varied for two, three, or more judges:

$$\frac{\text{2 X the sum of agreements}}{\text{sum of the items checked by both judges}}$$

There was one aspect of the research over which the investigator had no control. This was the natural rate of attrition one would expect during the course of a thirteen-year longitudinal study; and the end result was not only a decline in the total number of subjects being studied but also a loss of some subjects who were original members of either the High or Low groups. Because of this loss, the investigator has made the following two decisions, each of which will be represented in the findings contained in the monograph:

1. Subjects for whom there are less than four consecutive years of data (kindergarten through grade three) have been eliminated. This has reduced the Total group of subjects from 338 to 263.

2. The High and Low groups have been re-selected on the basis of a thirteen-year cumulative average of teachers' ratings. In addition, the *reliability* of the High and Low groups has been markedly increased by raising the N for each group to 35. Thus, when comparisons are made between the two groups, the *identical* 35

---

[1] Herbert S. Lewin, *Human Relations*, Vol. 1, No. 2 (1947), p. 206 ff.

High subjects will be compared to the identical 35 Low subjects for each given year from kindergarten through grade twelve.

It is of interest to examine the data on the High, Low, and Total groups as well as the same data on a Central group of subjects (a group which includes all subjects except those classified as either High or Low). In the present monograph a Central group has been shown separately whenever possible.

## PART IV. RESULTS OF THE INVESTIGATION

### FLUENCY WITH ORAL LANGUAGE

When one thinks of fluency with oral language, the connotation is generally of a readiness to express oneself combined with a smooth, easy flow of words such as frequently found in the language of statesmen or public speakers. In studying the language of children, however, one cannot expect to find the same degree of proficiency. Children, even at the high school level, obviously lack the polish and rhetorical skill of the trained public speaker, and in examining their language one must search for less obvious indications of their fluency--for evidence pertaining to their volume of language, their length of communication units, and their freedom from language tangles which tend to limit the effectiveness of communication.

### Nine Measures of Language Derived from the Oral Interviews

The findings on oral fluency are drawn from the typed transcripts of the subjects' interviews. As the reader has noted, each subject was interviewed once per year, using a standard interview identical for all subjects in the study. These oral interviews were typed according to a careful set of directions. The transcripts themselves were then segmented into communication units, and mazes were bracketed in red. At that point each unit of communication and each maze was individually counted and entered on the subject's transcript. From this initial analysis it was then possible to obtain nine measures of the subjects' language ability, each of which will be discussed in turn in the following paragraphs.

## Total Number of Words in Transcript

The total number of words in transcript includes every word spoken by the subject regardless of whether or not any given word was bracketed as a maze or was an acceptable word contained in a communication unit. For sheer amount of language--disregarding any standards of quality or coherence--the transcripts obtained during the thirteen-year period of the study ranged from a total of 2 words spoken by a kindergarten subject whose parents spoke only Chinese to a total of 10,048 words spoken by a male Caucasian in grade twelve.

From examining the data on total number of words in transcripts one can see that the trend is steadily upward from kindergarten through grade twelve although there are certainly dips and plateaus in the volume of spoken language. (See Table 5 and Figure 3.) Without exception the High group exhibits the greatest volume of spoken language in every year of the study; the Low group speaks the least; and the Total group invariably falls between the High and Low groups.[1] In a few years, notably grades four, five. and six, the rate of increase in spoken volume appears markedly higher for each group than it does in other years of the study.

---

[1] The Central group follows the same pattern as the Total group, not only on this measure but on virtually every other measure in the study. This is precisely what one would expect when one considers that the Central group includes all subjects except members of the High and Low groups. As an analogy one may think of the Central group as a long board that has already been balanced. If we then add the weight of the High group at one end and the weight of the Low group at the other end, the tendency is to maintain the previous balance.

## TABLE 5

## TOTAL NUMBER OF WORDS IN TRANSCRIPT
(Mean)

| Grade | High Group (N=35) | Low Group (N=35) | Central Group[1] | Total Group[1] |
|---|---|---|---|---|
| K | 715.57 | 511.21 | 594.91 | 600.64 |
| 1 | 727.44 | 512.40 | 591.34 | 599.72 |
| 2 | 864.58 | 666.14 | 763.21 | 763.00 |
| 3 | 945.53 | 603.80 | 819.83 | 807.19 |
| 4 | 1204.00 | 735.15 | 934.40 | 945.22 |
| 5 | 1412.14 | 961.80 | 1390.19 | 1331.65 |
| 6 | 1814.60 | 1093.40 | 1531.03 | 1508.18 |
| 7 | 1807.14 | 1156.83 | 1482.53 | 1482.37 |
| 8 | 1855.57 | 1354.60 | 1416.10 | 1475.16 |
| 9 | 1988.86 | 1366.57 | 1538.25 | 1582.62 |
| 10 | 2131.57 | 1461.14 | -- | 1864.34 |
| 11 | 1947.71 | 1340.43 | -- | 1632.63 |
| 12 | 2154.83 | 1403.97 | -- | 1876.54 |

---

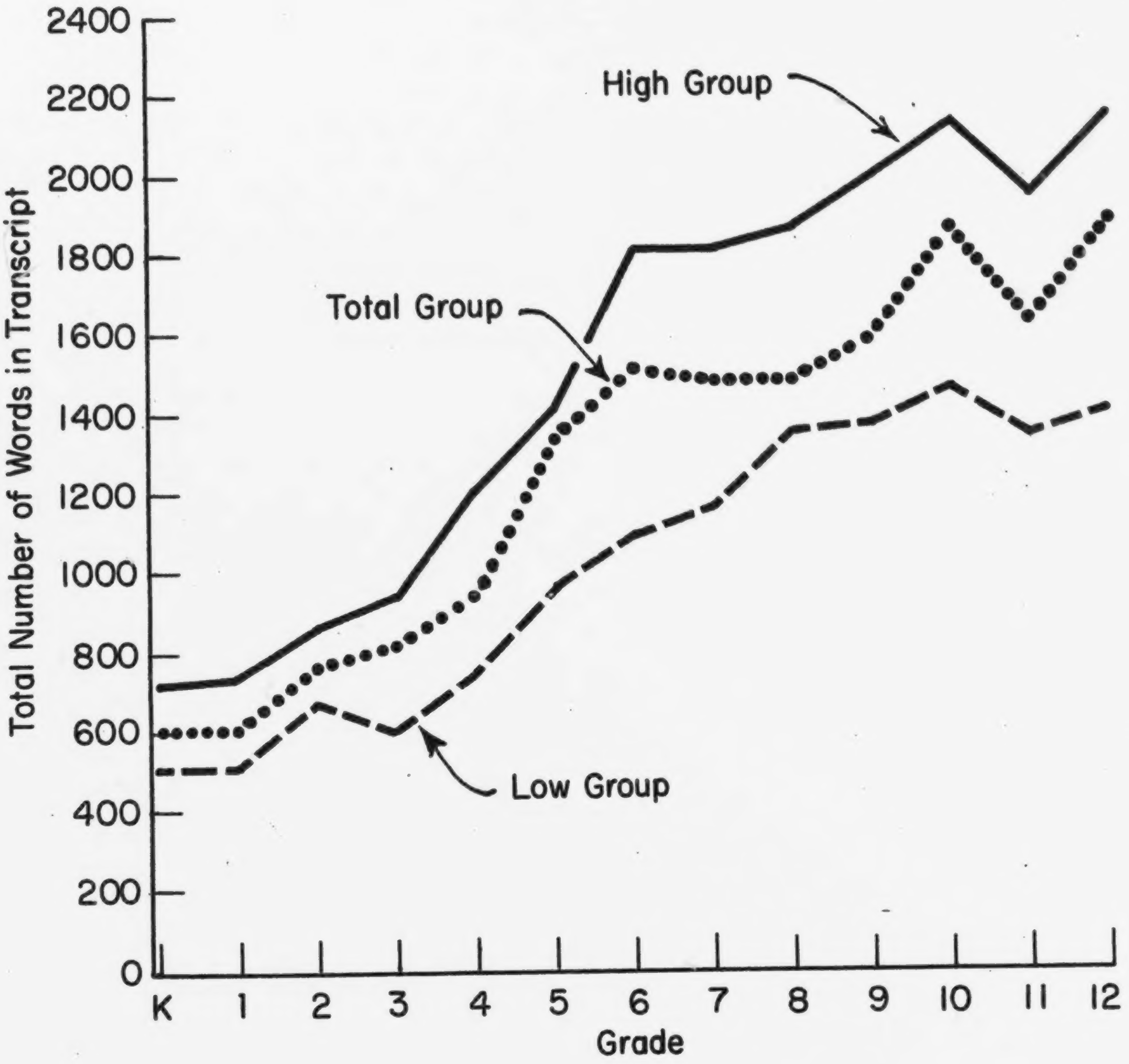
[1]

| | K | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| Central Group N | 193 | 193 | 193 | 193 | 177 | 173 | 166 | 160 | 154 | 150 |
| Total Group N | 263 | 263 | 263 | 263 | 247 | 243 | 236 | 230 | 224 | 220 |

The oral language of the Total group of subjects has not yet been completely transcribed into typewritten form; as a result the Random group of 35 subjects has been substituted for the Total group in grades ten, eleven, and twelve. The Random group could also have been substituted for the Central group. This was not done because the Total group rather than the Central group has been presented graphically for comparison with the High and Low groups. On occasion a subject has been unavoidably missed for one year and then picked up again in the following year. The N's shown are the number of subjects on whom a computer analysis is being undertaken, with group means substituted for missing data and lost degrees of freedom specified where applicable.

FIGURE 3

TOTAL NUMBER OF WORDS IN TRANSCRIPT
(Mean)



## Total Number of Communication Units in Transcript

The evidence on communication units shows less of a steady upward trend than was discernible when studying the total words in the subjects' transcripts. (See Table 6 and Figure 4.) Still, the High group invariably uses more communication units than does the Low group.

One item of particular interest is that all groups start at virtually the same point in kindergarten; they remain relatively close together through grades one and two; only at grade three do they begin to show a marked tendency to branch apart.

## TABLE 6

## TOTAL NUMBER OF COMMUNICATION UNITS IN TRANSCRIPT
(Mean)

| Grade | High Group (N=35) | Low Group (N=35) | Central Group[1] | Total Group[1] |
|---|---|---|---|---|
| K | 102.26 | 99.09 | 99.82 | 100.06 |
| 1 | 94.84 | 82.83 | 85.75 | 86.61 |
| 2 | 110.91 | 101.17 | 104.26 | 104.69 |
| 3 | 114.53 | 88.60 | 105.97 | 104.75 |
| 4 | 131.60 | 98.21 | 110.07 | 111.49 |
| 5 | 152.57 | 127.37 | 159.19 | 153.65 |
| 6 | 180.37 | 131.57 | 167.23 | 163.89 |
| 7 | 162.09 | 123.69 | 152.19 | 149.36 |
| 8 | 161.83 | 143.89 | 139.62 | 143.76 |
| 9 | 172.97 | 146.34 | 151.83 | 154.32 |
| 10 | 183.40 | 158.86 | -- | 179.14 |
| 11 | 151.86 | 129.03 | -- | 138.57 |
| 12 | 158.20 | 119.43 | -- | 155.20 |

---

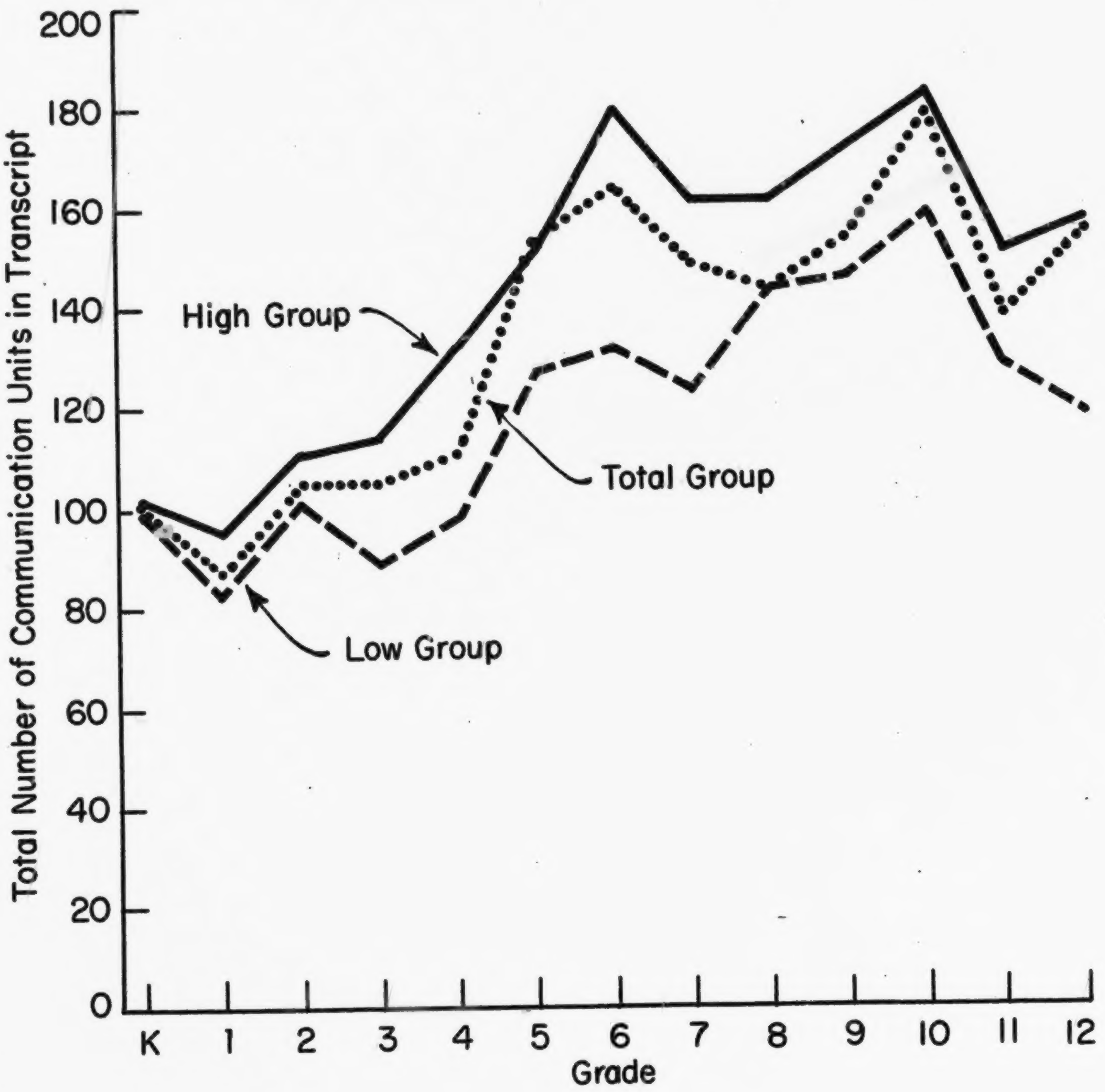
[1]

| | K | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| Central Group N | 193 | 193 | 193 | 193 | 177 | 173 | 166 | 160 | 154 | 150 |
| Total Group N | 263 | 263 | 263 | 263 | 247 | 243 | 236 | 230 | 224 | 220 |

The oral language of the Total group of subjects has not yet been completely transcribed into typewritten form; as a result the Random group of 35 subjects has been substituted for the Total group in grades ten, eleven, and twelve. The Random group could also have been substituted for the Central group. This was not done because the Total group rather than the Central group has been presented graphically for comparison with the High and Low groups. On occasion a subject has been unavoidably missed for one year and then picked up again in the following year. The N's shown are the number of subjects on whom a computer analysis is being undertaken, with group means substituted for missing data and lost degrees of freedom specified where applicable.

FIGURE 4

TOTAL NUMBER OF COMMUNICATION UNITS IN TRANSCRIPT
(Mean)



## Total Number of Words in Communication Units

The total number of words in communication units is simply the sum total of all words used in grammatical patterns (the total words in the subject's transcript excluding his maze words). Again, just as in the case of total words in transcript, the total number of words in communication units showed steady upward trend for all groups. (See Table 7 and Figure 5.)

One interesting aspect of the graphic presentation is that the data in Figure 5 (total words in communication units) appear to be a perfect replica of the data in Figure 3 (total words in transcript). This is actually something of an optical illusion since it will be seen at a later point that the three groups actually have quite different proportions of maze words.[1]

---

[1] The basic difficulty in trying to see any differences between the two graphs may be traced to the fact that when using a scale that ranges from 0 to over 2000, a difference of 20 or 30 words is just barely perceptible.

## TABLE 7

## TOTAL NUMBER OF WORDS IN COMMUNICATION UNITS (Mean)

| Grade | High Group (N=35) | Low Group (N=35) | Central Group[1] | Total Group[1] |
|---|---|---|---|---|
| K | 644.63 | 463.64 | 543.01 | 546.69 |
| 1 | 667.59 | 464.37 | 545.64 | 551.82 |
| 2 | 813.42 | 607.00 | 708.52 | 708.17 |
| 3 | 897.03 | 551.80 | 765.38 | 753.85 |
| 4 | 1132.77 | 664.91 | 869.94 | 879.00 |
| 5 | 1323.86 | 876.57 | 1287.39 | 1233.47 |
| 6 | 1696.97 | 986.31 | 1417.29 | 1394.85 |
| 7 | 1697.80 | 1039.69 | 1378.18 | 1375.30 |
| 8 | 1748.31 | 1229.34 | 1316.60 | 1370.42 |
| 9 | 1887.77 | 1251.06 | 1438.93 | 1480.45 |
| 10 | 2002.51 | 1355.80 | -- | 1741.03 |
| 11 | 1815.23 | 1230.94 | -- | 1520.34 |
| 12 | 1977.29 | 1283.46 | -- | 1730.63 |

---

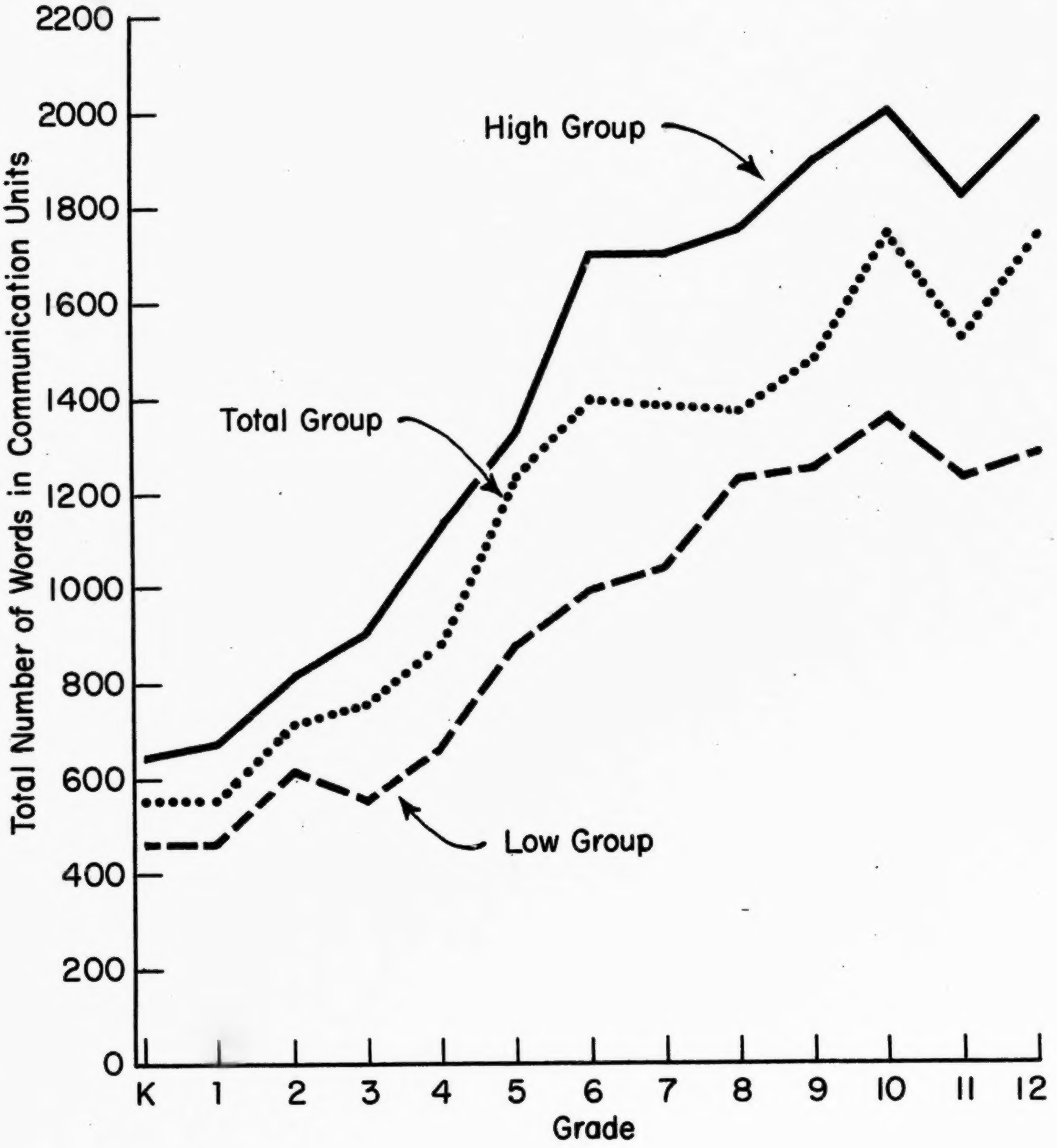
[1]

|  | K | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| Central Group N | 193 | 193 | 193 | 193 | 177 | 173 | 166 | 160 | 154 | 150 |
| Total Group N | 263 | 263 | 263 | 263 | 247 | 243 | 236 | 230 | 224 | 220 |

The oral language of the Total group of subjects has not yet been completely transcribed into typewritten form; as a result the Random group of 35 subjects has been substituted for the Total group in grades ten, eleven, and twelve. The Random group could also have been substituted for the Central group. This was not done because the Total group rather than the Central group has been presented graphically for comparison with the High and Low groups. On occasion a subject has been unavoidably missed for one year and then picked up again in the following year. The N's shown are the number of subjects on whom a computer analysis is being undertaken, with group means substituted for missing data and lost degrees of freedom specified where applicable.

## FIGURE 5

## TOTAL NUMBER OF WORDS IN COMMUNICATION UNITS
(Mean)



## Average Number of Words per Communication Unit

A high average number of words per communication unit could simply be the result of verbosity--a greater use of language without any significant increase in meaningful communication. In this research, however, this has not proved to be the case. Almost without exception, a high average words per unit is accompanied by a higher teacher's rating on language skill, by a wider use of phrases and clauses, by more use of appositives and infinitives, and by the use of other forms of elaboration contributing to more clear and meaningful communication. For this reason the average number of words per communication unit has proved to be one of the most crucial measures of fluency developed during the course of the investigation.

In the data on average number of words per communication unit, two features seem to stand out quite clearly. The first is that the upward progression from kindergarten through grade twelve is virtually uninterrupted and in almost a straight line for each group. (See Table 8 and Figure 6.) The second is that for the entire thirteen-year period each group remains in an almost perfect relationship to every other group. The lines on the graph do not cross or even come close to crossing, and in grade twelve the High group exhibits virtually the same degree of superiority that it showed in kindergarten. Thus, from the standpoint of obtaining a simple, straightforward method to measure the degree of fluency with language, the average number of words per communication unit appears to be an exceptionally good device.

## TABLE 8

### AVERAGE NUMBER OF WORDS PER COMMUNICATION UNIT (Mean)

| Grade | High Group (N=35) | Low Group (N=35) | Central Group[1] | Total Group[1] |
|---|---|---|---|---|
| K | 6.01 | 4.29 | 5.11 | 5.13 |
| 1 | 6.89 | 5.08 | 6.08 | 6.06 |
| 2 | 7.17 | 5.70 | 6.48 | 6.46 |
| 3 | 7.65 | 6.04 | 6.94 | 6.91 |
| 4 | 8.52 | 6.55 | 7.74 | 7.68 |
| 5 | 8.72 | 6.75 | 7.96 | 7.89 |
| 6 | 9.39 | 7.37 | 8.37 | 8.37 |
| 7 | 10.45 | 8.12 | 9.02 | 9.10 |
| 8 | 10.85 | 8.54 | 9.31 | 9.43 |
| 9 | 10.84 | 8.37 | 9.41 | 9.47 |
| 10 | 11.09 | 8.39 | -- | 9.58 |
| 11 | 12.16 | 9.46 | -- | 10.82 |
| 12 | 12.94 | 10.34 | -- | 11.09 |

---

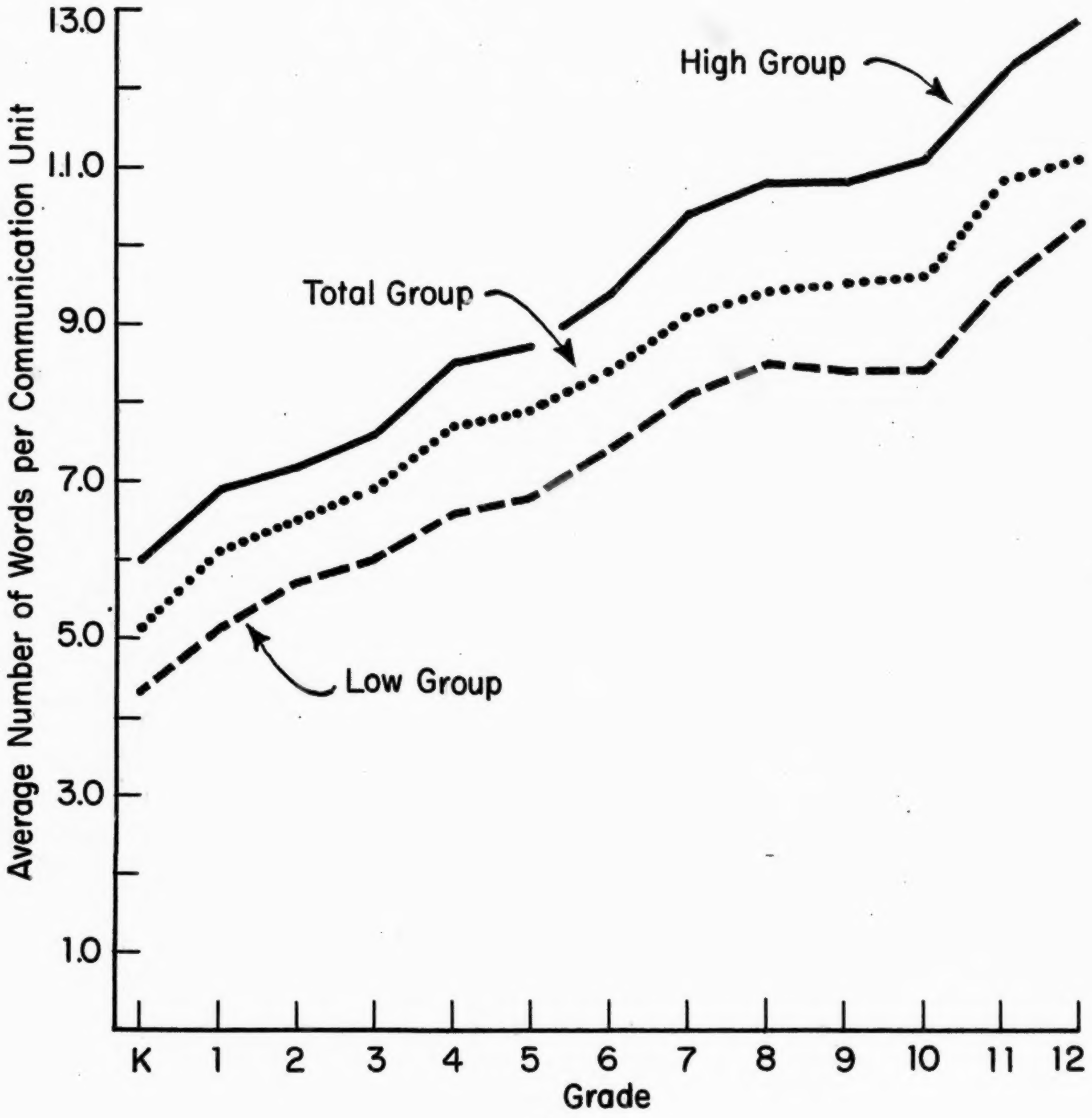
[1]

| | K | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| Central Group N | 193 | 193 | 193 | 193 | 177 | 173 | 166 | 160 | 154 | 150 |
| Total Group N | 263 | 263 | 263 | 263 | 247 | 243 | 236 | 230 | 224 | 220 |

The oral language of the Total group of subjects has not yet been completely transcribed into typewritten form; as a result the Random group of 35 subjects has been substituted for the Total group in grades ten, eleven, and twelve. The Random group could also have been substituted for the Central group. This was not done because the Total group rather than the Central group has been presented graphically for comparison with the High and Low groups. On occasion a subject has been unavoidably missed for one year and then picked up again in the following year. The N's shown are the number of subjects on whom a computer analysis is being undertaken, with group means substituted for missing data and lost degrees of freedom specified where applicable.

FIGURE 6

AVERAGE NUMBER OF WORDS PER COMMUNICATION UNIT
(Mean)



## Total Number of Mazes in Transcript

The total number of mazes in transcript is the number of red brackets setting off the tangles of language in the subject's transcript. As the investigator has indicated previously, there may be one or more maze words within any given maze. Thus, this initial measure (total number of mazes in transcript) merely indicates the number of times a subject has become tangled in his language without taking into consideration the subject's number of maze words or the volume of his spoken language. For this reason the total number of mazes in transcript should be considered a raw number which has been presented more as a matter of interest than as a valid measuring device. (See Table 9 and Figure 7.)

Despite its obvious limitations, one aspect of interest concerning the total number of mazes in transcript is that during the first ten years (kindergarten through grade nine) each group tends to cross back and forth within a very narrow range. (See Figure 7.) This, it should be noted, gives the first indication that when mazes and maze words are treated proportionally, the High group will show a greater degree of control over these language tangles than will the Low, Central, and Total groups.[1]

---

[1] In looking at the data on mazes as well as on the data that will follow dealing with maze words and average words per maze, the reader should note that there has been a perceptible change in the findings of the research as compared to previous findings published by the investigator. This is actually the only case in the entire study where a change in the size of the High and Low groups has altered the relative performance of these two groups; and in point of fact much of the change has resulted from a change in analysis. (See the Methods section in the monograph under the heading "Structural Dislocations in Oral Language." To those unfamiliar with the research, it should be pointed out that the High group has always had a lower average number of words per maze than the Low group, a lower proportion of maze words as compared to total words in transcript, etc. The change in analysis has actually tended to favor the Low group, bringing this group to a point closer to the High group than it had been previously.

## TABLE 9

## TOTAL NUMBER OF MAZES IN TRANSCRIPT
(Mean)

| Grade | High Group (N=35) | Low Group (N=35) | Central Group[1] | Total Group[1] |
|---|---|---|---|---|
| K | 31.26 | 21.12 | 24.35 | 24.88 |
| 1 | 28.81 | 23.17 | 22.45 | 23.40 |
| 2 | 24.18 | 29.86 | 26.46 | 26.63 |
| 3 | 25.38 | 25.77 | 26.97 | 26.60 |
| 4 | 35.00 | 33.62 | 30.85 | 31.83 |
| 5 | 43.43 | 39.69 | 47.86 | 46.05 |
| 6 | 55.34 | 47.09 | 53.70 | 52.96 |
| 7 | 55.83 | 52.26 | 51.98 | 52.61 |
| 8 | 57.37 | 55.09 | 49.17 | 51.38 |
| 9 | 54.71 | 53.71 | 51.06 | 52.06 |
| 10 | 69.57 | 51.03 | -- | 63.00 |
| 11 | 71.46 | 51.60 | -- | 59.71 |
| 12 | 89.97 | 56.40 | -- | 71.91 |

---

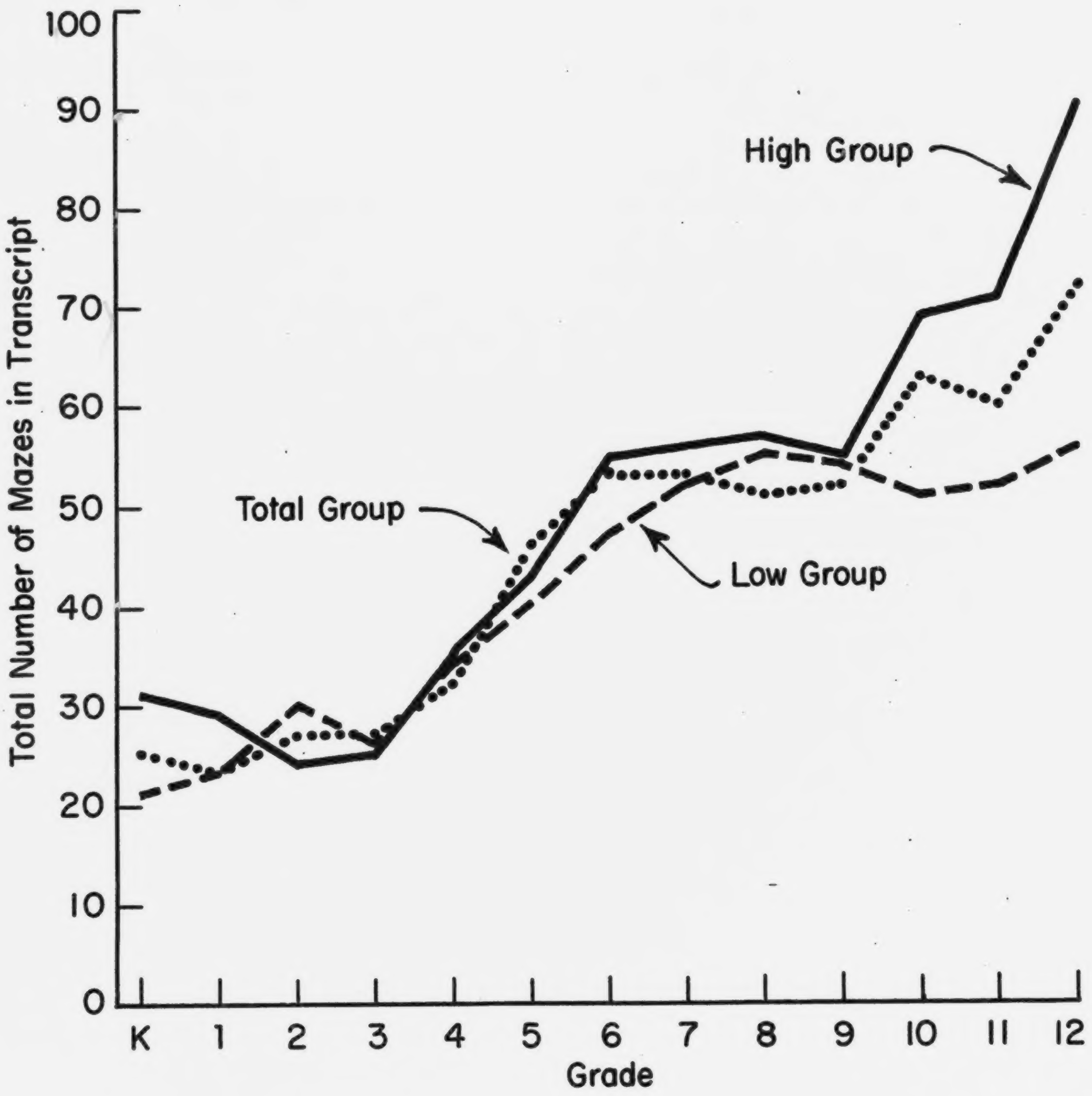
[1]

| | K | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| Central Group N | 193 | 193 | 193 | 193 | 177 | 173 | 166 | 160 | 154 | 150 |
| Total Group N | 263 | 263 | 263 | 263 | 247 | 243 | 236 | 230 | 224 | 220 |

The oral language of the Total group of subjects has not yet been completely transcribed into typewritten form; as a result the Random group of 35 subjects has been substituted for the Total group in grades ten, eleven, and twelve. The Random group could also have been substituted for the Central group. This was not done because the Total group rather than the Central group has been presented graphically for comparison with the High and Low groups. On occasion a subject has been unavoidably missed for one year and then picked up again in the following year. The N's shown are the number of subjects on whom a computer analysis is being undertaken, with group means substituted for missing data and lost degrees of freedom specified where applicable.

FIGURE 7

TOTAL NUMBER OF MAZES IN TRANSCRIPT



## Total Number of Words in Mazes

Again, as in the case of total number of mazes in transcript, the total number of words in mazes should be viewed as raw data which have been presented as a matter of interest rather than as a measure of the subjects' fluency or lack of fluency. (See Table 10 and Figure 8.)

Actually there is a great degree of similarity in the data shown in Figure 8 and those shown in Figure 7. Just as on the question of mazes, when viewing words in mazes, we see the same crossing back and forth among the groups. In addition, the groups remain quite close together from kindergarten through grade nine, indicating once again that when the data on mazes are treated proportionally, the High group will show a greater degree of control over these language tangles than will any of the other groups being studied.

## TABLE 10

## TOTAL NUMBER OF WORDS IN MAZES
(Mean)

| Grade | High Group (N=35) | Low Group (N=35) | Central Group[1] | Total Group[1] |
|---|---|---|---|---|
| K | 70.91 | 47.55 | 51.94 | 53.98 |
| 1 | 59.72 | 48.03 | 45.73 | 47.91 |
| 2 | 51.06 | 59.14 | 54.69 | 54.83 |
| 3 | 48.38 | 52.03 | 54.44 | 53.32 |
| 4 | 71.23 | 70.24 | 64.46 | 66.22 |
| 5 | 88.29 | 85.37 | 102.81 | 98.21 |
| 6 | 117.63 | 107.09 | 113.76 | 113.35 |
| 7 | 109.34 | 117.14 | 104.36 | 107.06 |
| 8 | 107.49 | 125.26 | 99.49 | 104.77 |
| 9 | 101.09 | 115.51 | 99.08 | 102.01 |
| 10 | 129.06 | 105.46 | -- | 123.31 |
| 11 | 132.49 | 109.49 | -- | 112.29 |
| 12 | 177.54 | 120.51 | -- | 145.91 |

---

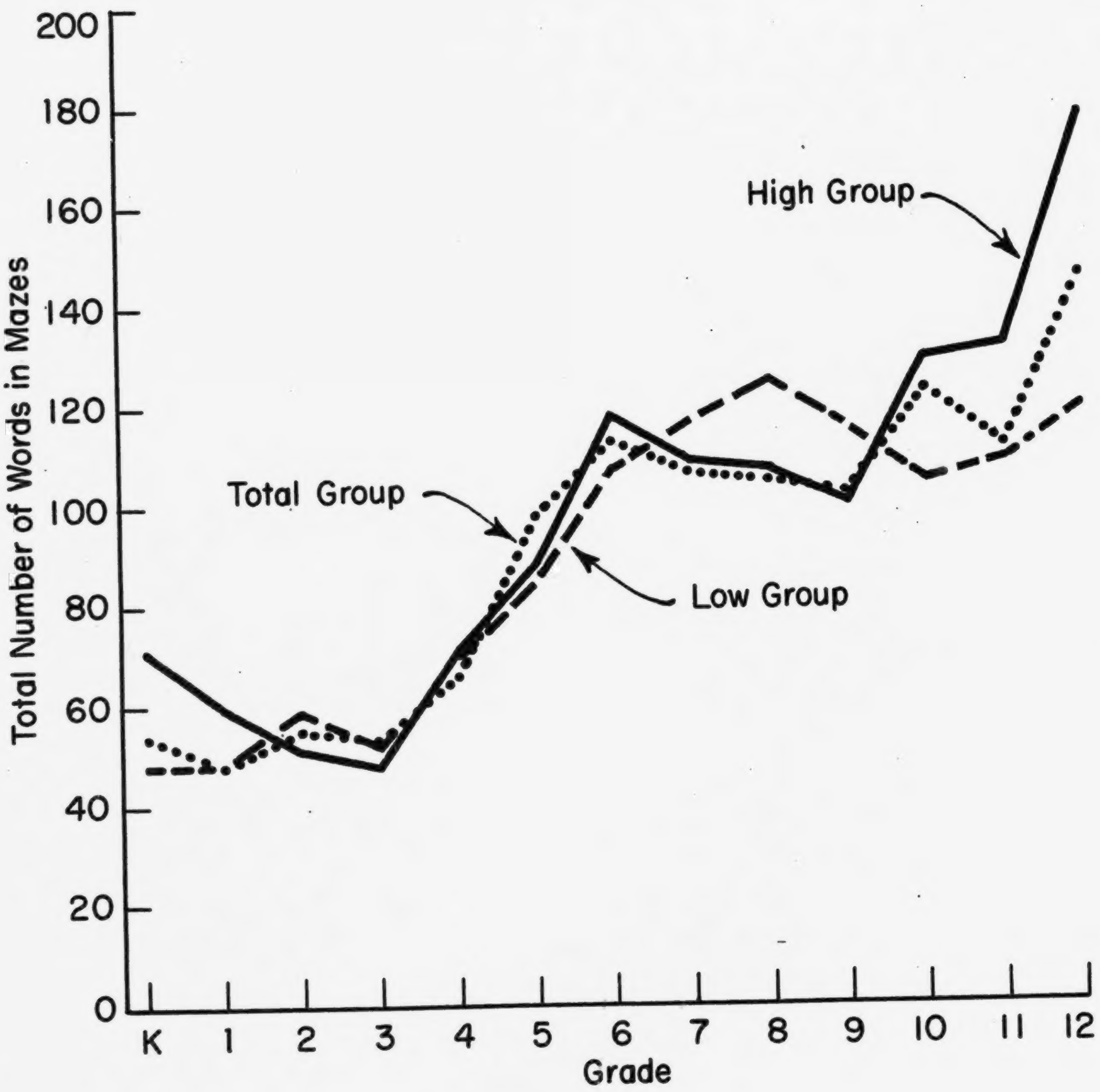
[1]

|  | K | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| Central Group N | 193 | 193 | 193 | 193 | 177 | 173 | 166 | 160 | 154 | 150 |
| Total Group N | 263 | 263 | 263 | 263 | 247 | 243 | 236 | 230 | 224 | 220 |

The oral language of the Total group of subjects has not yet been completely transcribed into typewritten form; as a result the Random group of 35 subjects has been substituted for the Total group in grades ten, eleven, and twelve. The Random group could also have been substituted for the Central group. This was not done because the Total group rather than the Central group had been presented graphically for comparison with the High and Low groups. On occasion a subject has been unavoidably missed for one year and then picked up again in the following year. The N's shown are the number of subjects on whom a computer analysis is being undertaken, with group means substituted for missing data and lost degrees of freedom specified where applicable.

FIGURE 8

TOTAL NUMBER OF WORDS IN MAZES
(Mean)



## Average Number of Words per Maze

The average number of words per maze is the subject's total number of maze words divided by his total number of mazes. By this process each subject is treated in an identical manner, using two pieces of raw data to obtain a more refined measure. (See Table 11 and Figure 9.)

In some respects, of course, this particular measuring device (the average number of words per maze) has a tendency to understate the Low group's difficulties in overcoming these obstacles to fluency (mazes). This results from the fact that the Low group uses a lower volume of spoken language as well as a lower average number of words per communication unit. In other words, from a purely logical standpoint, one would expect the probability of becoming tangled in language to be disproportionately low if one used a relatively low volume of language and spoke in relatively short units of communication.

From looking at Figure 9, one can see that the explanation above probably accounts for the fact that in kindergarten the High group actually has a higher average number of words per maze than the Low, Central, or Total group of subjects. In grades one and two this disparity diminishes, with the groups tending to move closer together. And from grade three onward, despite the fact that the High group uses more volume as well as a higher number of words per communication unit, it actually has a lower average number of words per maze than any of the other groups studied.

## TABLE 11

## AVERAGE NUMBER OF WORDS PER MAZE
(Mean)

| Grade | High Group (N=35) | Low Group (N=35) | Central Group[1] | Total Group[1] |
|---|---|---|---|---|
| K | 2.19 | 1.92 | 1.93 | 1.96 |
| 1 | 1.91 | 1.84 | 1.93 | 1.91 |
| 2 | 1.94 | 1.94 | 1.96 | 1.95 |
| 3 | 1.85 | 1.90 | 1.88 | 1.88 |
| 4 | 1.95 | 2.00 | 1.99 | 1.99 |
| 5 | 1.89 | 2.02 | 2.03 | 2.01 |
| 6 | 2.03 | 2.19 | 2.03 | 2.05 |
| 7 | 1.91 | 2.10 | 1.93 | 1.95 |
| 8 | 1.86 | 2.16 | 1.93 | 1.96 |
| 9 | 1.78 | 2.04 | 1.87 | 1.88 |
| 10 | 1.79 | 1.97 | -- | 1.93 |
| 11 | 1.80 | 2.00 | -- | 1.87 |
| 12 | 1.91 | 2.10 | -- | 1.96 |

---

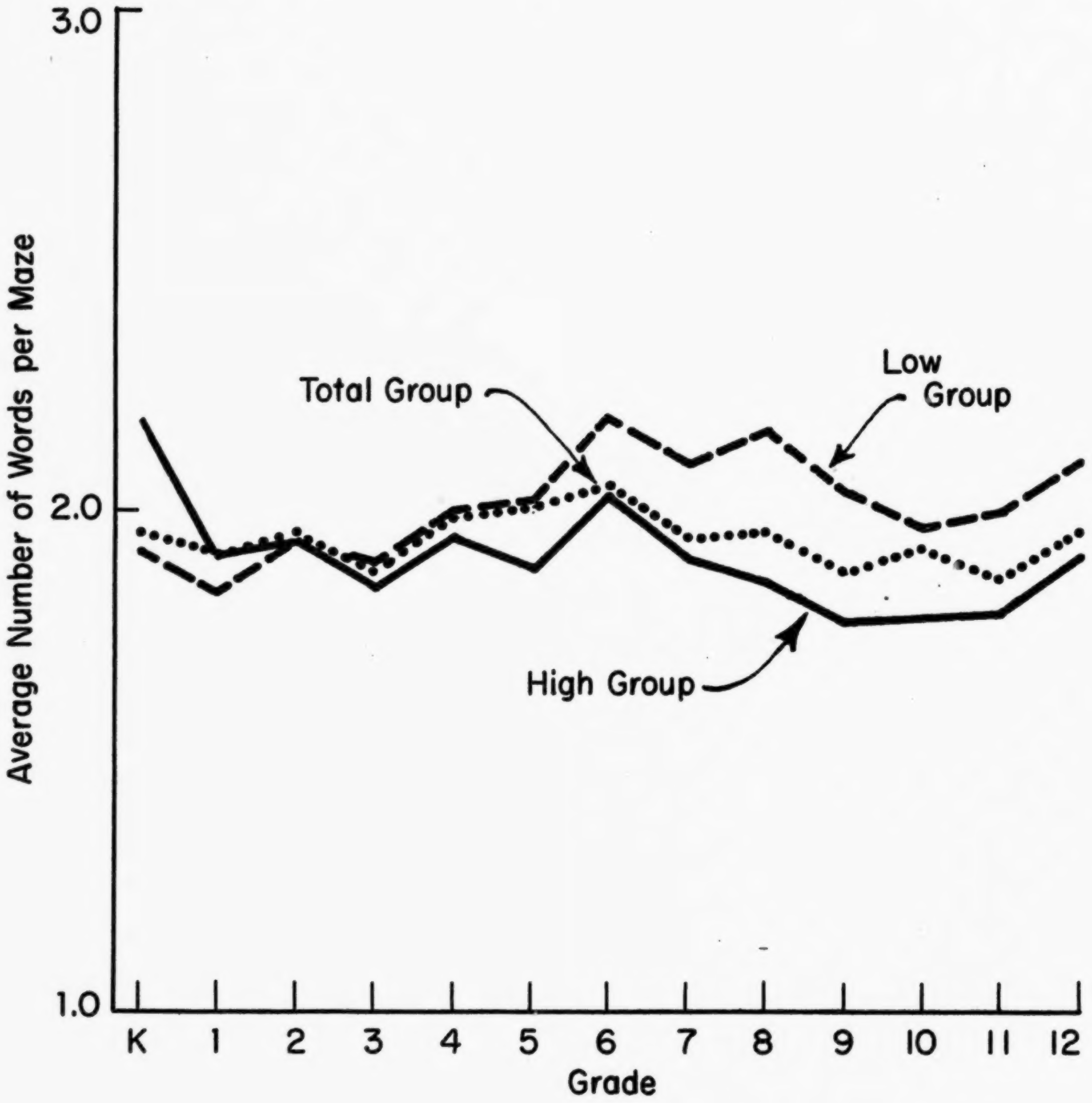
[1]

| | K | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| Central Group N | 193 | 193 | 193 | 193 | 177 | 173 | 166 | 160 | 154 | 150 |
| Total Group N | 263 | 263 | 263 | 263 | 247 | 243 | 236 | 230 | 224 | 220 |

The oral language of the Total group of subjects has not yet been completely transcribed into typewritten form; as a result the Random group of 35 subjects has been substituted for the Total group in grades ten, eleven, and twelve. The Random group could also have been substituted for the Central group. This was not done because the Total group rather than the Central group has been presented graphically for comparison with the High and Low groups. On occasion a subject has been unavoidably missed for one year and then picked up again in the following year. The N's shown are the number of subjects on whom a computer analysis is being undertaken, with group means substituted for missing data and lost degrees of freedom specified where applicable.

## FIGURE 9

## AVERAGE NUMBER OF WORDS PER MAZE
(Mean)



## Mazes as a Percentage of Communication Units

This measure compares the number of mazes in a subject's transcript to his total number of communication units. For example, if a subject had 50 mazes and 200 communication units, mazes as a percentage of communication units would equal 25.00 per cent.

Obviously, this measure does not treat each group in an identical manner; nor does it treat the *same* group in a proportional way over a successive number of years. The reason for this is that each group *begins* with a different average number of words per unit (and thus a different probability for committing a maze); in addition all groups *increase* their average number of words per communication unit in successive years of the study (thus altering the probabilities a second time). Nevertheless, the measure is of interest because the general trend is an *increasing* number of mazes as a *percentage* of communication units for all groups studied. In other words, as the complexity of language increases (an increase in average words per communication unit), the number of mazes *per* communication unit also increases. (See Table 12 and Figure 10.)

## TABLE 12

### MAZES AS A PERCENTAGE OF COMMUNICATION UNITS
(Mean--in per cent)

| Grade | High Group (N=35) | Low Group (N=35) | Central Group[1] | Total Group[1] |
|---|---|---|---|---|
| K | 28.18 | 18.32 | 22.52 | 22.76 |
| 1 | 28.09 | 24.32 | 23.88 | 24.50 |
| 2 | 20.27 | 26.88 | 23.28 | 23.39 |
| 3 | 21.40 | 25.91 | 23.22 | 23.34 |
| 4 | 26.12 | 33.75 | 26.90 | 27.74 |
| 5 | 27.21 | 30.35 | 28.98 | 28.92 |
| 6 | 28.47 | 35.19 | 30.67 | 31.02 |
| 7 | 33.23 | 41.43 | 33.61 | 34.74 |
| 8 | 35.29 | 38.22 | 34.09 | 34.92 |
| 9 | 31.67 | 34.75 | 32.44 | 32.69 |
| 10 | 36.77 | 30.83 | -- | 33.89 |
| 11 | 48.59 | 39.79 | -- | 41.43 |
| 12 | 56.70 | 46.84 | -- | 43.22 |

---

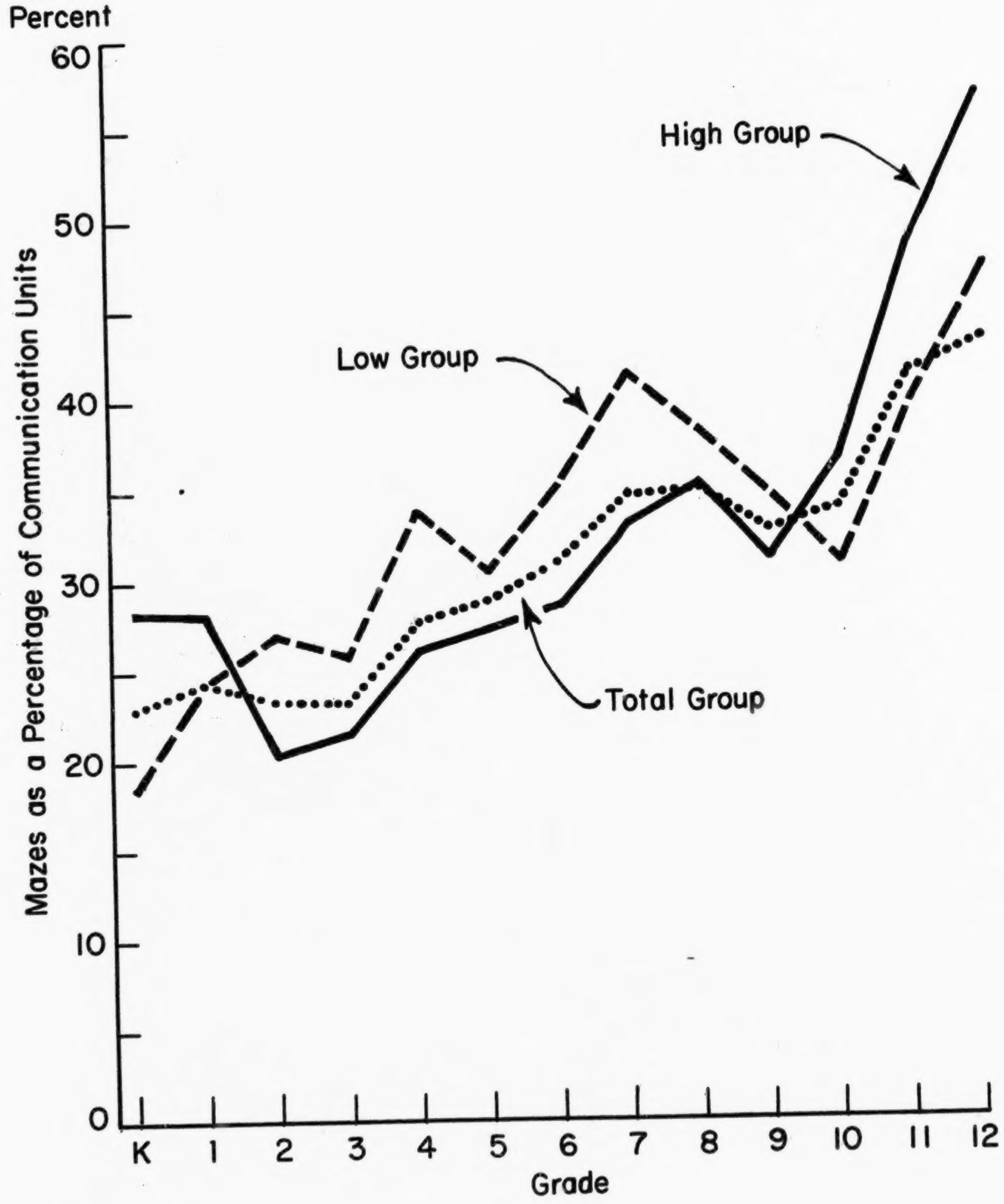
[1]

| | K | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| Central Group N | 193 | 193 | 193 | 193 | 177 | 173 | 166 | 160 | 154 | 150 |
| Total Group N | 263 | 263 | 263 | 263 | 247 | 243 | 236 | 230 | 224 | 220 |

The oral language of the Total group of subjects has not yet been completely transcribed into typewritten form; as a result the Random group of 35 subjects has been substituted for the Total group in grades ten, eleven, and twelve. The Random group could also have been substituted for the Central group. This was not done because the Total group rather than the Central group has been presented graphically for comparison with the High and Low groups. On occasion a subject has been unavoidably missed for one year and then picked up again in the following year. The N's shown are the number of subjects on whom a computer analysis is being undertaken, with group means substituted for missing data and lost degrees of freedom specified where applicable.

FIGURE 10

MAZES AS A PERCENTAGE OF COMMUNICATION UNITS
(Mean -- in per cent)



## Maze Words as a Percentage of Total Words

Maze words as a percentage of total words is a measuring device similar to average number of words per maze in that each subject is treated not only identically but also proportionately. However, just as in the case of average number of words per maze, this measure (maze words as a percentage of total words) has a tendency to understate the Low group's difficulties in surmounting these barriers to effective communication (mazes) because of their lower volume of speech and their lower average number of words per communication unit.[1]

From looking at the data, it can be seen that in kindergarten the High group actually has a larger percentage of maze words than the Low, Central, or Total group of subjects. (See Table 13 and Figure 11.) This apparently results from the High group's using a greater volume of speech and a higher average number of words per communication unit while not yet having their language completely under control. In grade one the pattern tends to reverse; and from grade two onward the High group shows a greater degree of control over the proportion of maze words than any of the other groups studied.[2]

Actually, several items of interest appear quite vividly in the graphic presentation. (See Figure 11.) The first is that both the High group and the Total group achieve relatively long plateaus in their percentage of maze words (grades four through eight) in addition to having a downward trend between grades eight and nine. The Low group, although beginning from a higher point, also shows control over the percentage of maze words by exhibiting a downward trend in grades eight, nine, and ten. Other plateaus or downward trends are also visible in the early years of the study, indicating that at certain points all subjects are able to obtain control over maze words despite the fact that they use an increasing complexity of language.[3]

---

[1] As the investigator has pointed out previously, these two factors tend to reduce the Low group's probability of committing a maze.

[2] The Total group actually shows a slight superiority over the High group in grades eleven and twelve, but this may simply be the result of using the Random group as a substitute for the Total group in grades ten, eleven, and twelve.

[3] The reader will remember that the trend of average words per communication unit was steadily upward.

A second item of interest is that all groups show an upward trend in the high school years. This may indicate that beyond a certain point the increase in language complexity produces a more than proportionate increase in the percentage of maze words. Another possibility is that once the subjects have gained a greater degree of proficiency with language, they tend to become careless and fall into mazes which could easily be avoided if they were slightly more careful.

One further item, which may or may not be of major significance, pertains exclusively to the Low group. Their difficulties with language--their maze words as a percentage of total words--reach a peak in grade four, persist at a high level through grades five and six, reach a second peak at grade seven, and then begin a steady decline which carries through grade ten. This indicates that the middle years of their schooling is the period providing the greatest difficulties for the Low group--a period when the introduction of new materials is much more rapid than during the elementary years.

## TABLE 13

### MAZE WORDS AS A PERCENTAGE OF TOTAL WORDS IN TRANSCRIPT

(Mean--in per cent)

| Grade | High Group (N=35) | Low Group (N=35) | Central Group[1] | Total Group[1] |
|---|---|---|---|---|
| K | 8.98 | 7.76 | 7.78 | 7.94 |
| 1 | 7.24 | 8.07 | 6.88 | 7.08 |
| 2 | 5.22 | 8.04 | 6.41 | 6.48 |
| 3 | 4.87 | 7.50 | 5.86 | 5.95 |
| 4 | 5.79 | 9.41 | 6.52 | 6.82 |
| 5 | 5.79 | 8.32 | 6.97 | 6.99 |
| 6 | 5.88 | 9.29 | 6.95 | 7.14 |
| 7 | 5.71 | 9.83 | 6.76 | 7.06 |
| 8 | 5.60 | 8.97 | 6.63 | 6.84 |
| 9 | 5.05 | 7.99 | 6.03 | 6.19 |
| 10 | 5.80 | 6.79 | -- | 6.48 |
| 11 | 6.60 | 7.97 | -- | 6.55 |
| 12 | 7.49 | 8.42 | -- | 7.04 |

---

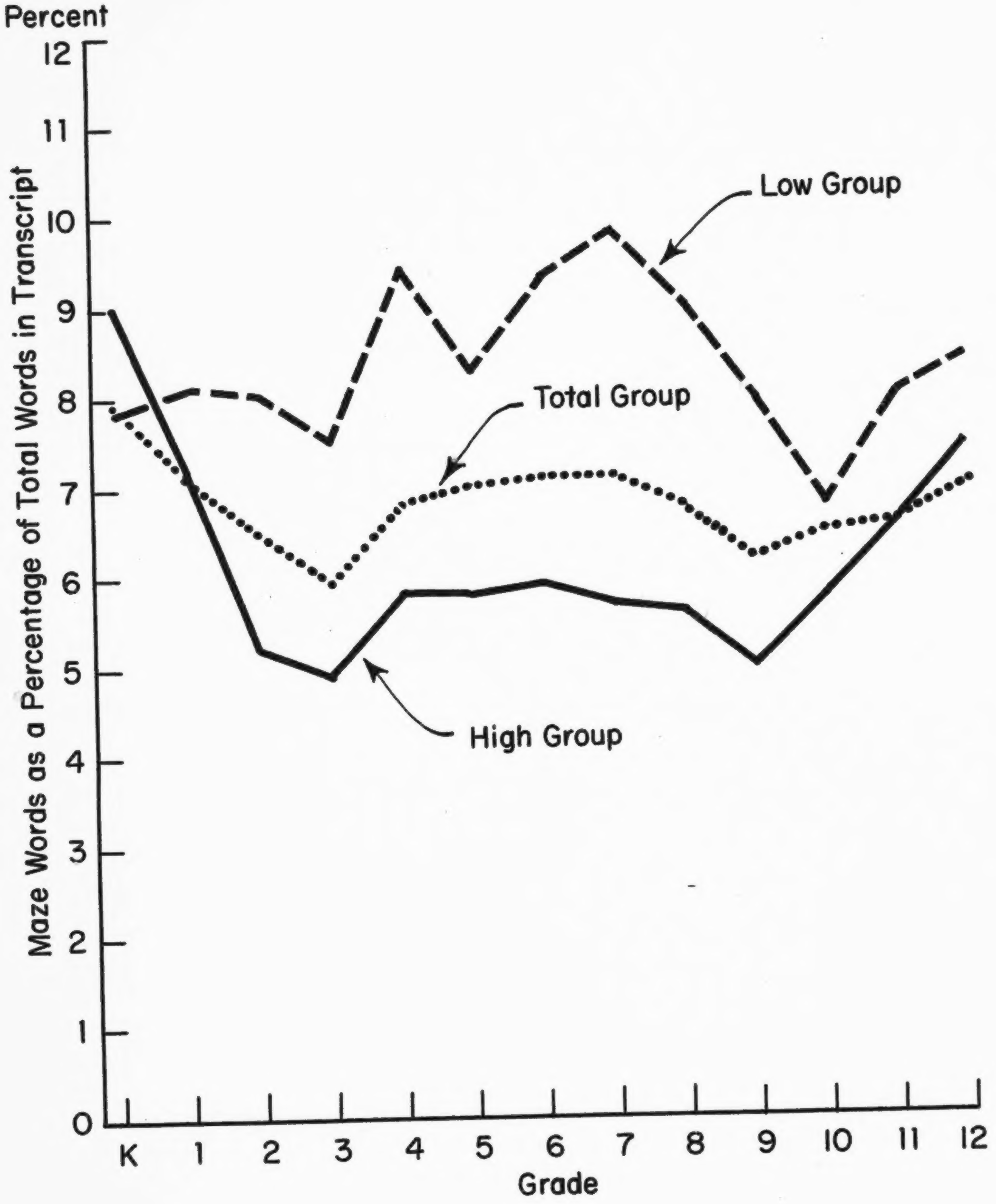
[1]

|  | K | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| Central Group N | 193 | 193 | 193 | 193 | 177 | 173 | 166 | 160 | 154 | 150 |
| Total Group N | 263 | 263 | 263 | 263 | 247 | 243 | 236 | 230 | 224 | 220 |

The oral language of the Total group of subjects has not yet been completely transcribed into typewritten form; as a result the Random group of 35 subjects has been substituted for the Total group in grades ten, eleven, and twelve. The Random group could also have been substituted for the Central group. This was not done because the Total group rather than the Central group has been presented graphically for comparison with the High and Low groups. On occasion a subject has been unavoidably missed for one year and then picked up again in the following year. The N's shown are the number of subjects on whom a computer analysis is being undertaken, with group means substituted for missing data and lost degrees of freedom specified where applicable.

## FIGURE 11

## MAZE WORDS AS A PERCENTAGE OF TOTAL WORDS IN TRANSCRIPT
(Mean)



## Summary: Nine Measures of Oral Language

To summarize briefly after examining these first nine measures of oral language, it can be said that the High group shows an obvious degree of superiority when compared to any of the other groups being studied. These subjects not only use a greater volume of language and a higher average number of words per communication unit than the Low, Central, or Total group of subjects but also have a lower average number of words per maze and a lower proportion of maze words as a percentage of the total words in their transcripts. The Central group and the Total group almost invariably fall into the middle range one would term to be "average"; and at the opposite extreme, the Low group shows the unmistakable signs associated with a lack of fluency with language: a low volume of language, a low average number of words per communication unit, a high average number of words per maze, and a high proportion of maze words as a percentage of total words. To state it more succinctly, the Low group not only says less than every other group but also has an obvious difficulty in doing so.

## Three Measures of Oral Language Related to the Subjects' Socio-Economic Status

Of the nine measures of oral language discussed above, the three which come closest to treating each subject alike and thereby providing accurate indexes of fluency are the average number of words per communication unit, the average number of words per maze, and maze words as a percentage of total words. Each of these will be treated in turn, with the findings of the research related to the subjects' socio-economic status.

## Average Number of Words per Communication Unit by Socio-Economic Groupings

From examining the data in Table 14, one can see that all socio-economic groups of subjects, regardless of whether they are high or low in socio-economic status, have a steady upward progression in average number of words per communication unit. This is true in every year studied and is precisely what one would expect in view of the schooling and the advancing age of the subjects. On the other hand, the differences among the socio-economic groups are quite remarkable. Those of high socio-economic status not only begin with a higher average number of words per communication unit than do those of low socio-economic status but also are able to maintain their lead from kindergarten through grade nine. In fact, in the kindergarten year, the socio-economic differences form a perfect progression, with those in socio-economic I having the highest average number of words per unit, those in socio-economic II and III having the next highest, etc., down to those in socio-economic VII who have the lowest average words per unit.

In successive years of the study this progression actually becomes less perfect, with some overlapping among the higher socio-economic categories as well as some overlapping among the lower ones. It should be noted, however, that there is never an overlap between the broad groupings at the top of the socio-economic scale and those at the bottom of the scale. In other words, if one compares the subjects in socio-economic groups I, II, and III to those in V, VI, and VII, one can see that the subjects in the upper three categories always have a higher average number of words per communication unit than do those in the lower three categories. This is true in every year without exception; it is all the more remarkable when one considers that a total of 30 statistical averages have been compared to 30 others (kindergarten through grade nine times 3) without finding a single case where the data overlap.

## TABLE 14

## AVERAGE NUMBER OF WORDS PER COMMUNICATION UNIT BY SOCIO-ECONOMIC STATUS

(Mean)

| | Grade[1] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Socio-Econ. Status | K | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I | 5.78 | 6.59 | 6.91 | 7.35 | 8.18 | 8.32 | 9.07 | 9.53 | 10.08 | 10.16 |
| II | 5.52 | 6.19 | 6.60 | 6.86 | 7.99 | 8.21 | 8.70 | 9.48 | 9.81 | 9.72 |
| III | 5.52 | 6.22 | 6.57 | 7.31 | 7.91 | 8.45 | 8.71 | 9.68 | 10.08 | 10.11 |
| IV | 5.07 | 5.77 | 6.66 | 6.79 | 7.72 | 7.83 | 8.12 | 8.95 | 8.94 | 9.18 |
| V | 4.85 | 6.10 | 6.25 | 6.64 | 7.50 | 7.58 | 7.76 | 8.78 | 9.30 | 9.11 |
| VI | 4.69 | 5.70 | 6.30 | 6.72 | 7.31 | 7.44 | 8.01 | 8.63 | 8.84 | 9.07 |
| VII | 4.24 | 5.62 | 6.04 | 6.85 | 7.09 | 7.38 | 7.93 | 8.60 | 8.93 | 9.14 |

---

[1] Since the Total group of subjects has not been completely transcribed and analyzed, data have not been presented beyond grade nine. The N's (actual) decline from kindergarten to grade nine because of the attrition rate in the study. By socio-economic status the N's range as follows: I--from 30 to 25, II--from 44 to 34, III--from 43 to 32, IV--from 24 to 21, V--from 53 to 45, VI--from 46 to 37, and VII--from 21 to 18.

## Average Number of Words per Maze by Socio-Economic Groupings

The evidence on average number of words per maze as related to socio-economic status is less clearly defined than the evidence on average number of words per communication unit. There are two years (kindergarten and grade three) in which those in socio-economic group I actually have a higher average number of words per maze than do those in the lower socio-economic categories; and in addition there are several other cases in which some overlapping exists among the highest three socio-economic groups as compared to the lowest three. Nevertheless, in the great majority of cases it is the lower socio-economic groups that have the highest average number of words per maze. This can be seen in Table 15 where the two highest numbers in each column have been underlined. Of 20 such cases which could be treated in this way, 17 fall into the lower three socio-economic groups, indicating that although there may be a few exceptions generally the subjects of lower socio-economic status have the most difficulty in overcoming this barrier to fluency.[1]

---

[1] In underlining the two highest numbers per year in Table 15, it was decided that where several numbers were identical the one to be underlined would be the one that tended to move the upper and lower socio-economic groups closer together. For example, in grade three socio-economic groups VI and VII have an identical average words per maze and the number underlined is for socio-economic group VI. In this research the evidence on cultural deprivation is so pervasive, it is felt that there is no need to press the point by making the groups appear wider apart than they are already.

## TABLE 15

### AVERAGE NUMBER OF WORDS PER MAZE BY SOCIO-ECONOMIC STATUS

(Mean)[1]

Grade[2]

| Socio-Econ. Status | K | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| I | 2.03 | 1.87 | 1.91 | 1.94 | 1.98 | 1.93 | 2.05 | 1.89 | 1.94 | 1.82 |
| II | 1.86 | 1.88 | 1.96 | 1.83 | 1.92 | 1.98 | 1.96 | 1.95 | 1.91 | 1.87 |
| III | 1.95 | 1.89 | 1.87 | 1.86 | 1.99 | 1.95 | 2.02 | 1.84 | 1.82 | 1.85 |
| IV | 1.94 | 1.91 | 1.93 | 1.94 | 1.89 | 2.03 | 1.97 | 1.95 | 1.97 | 1.78 |
| V | 2.00 | 1.96 | 2.01 | 1.87 | 2.05 | 2.00 | 2.07 | 1.92 | 2.00 | 1.88 |
| VI | 2.01 | 1.91 | 1.98 | 1.89 | 2.01 | 2.09 | 2.14 | 2.04 | 2.04 | 1.95 |
| VII | 1.93 | 1.99 | 1.98 | 1.89 | 2.02 | 2.13 | 2.17 | 2.20 | 2.00 | 2.01 |

---

[1] To simplify comparisons between the upper three socio-economic categories and the lower three socio-economic categories, the two highest numbers in each column have been underlined. Note that in cases where several numbers were identical the one to be underlined would be the one that tended to move the upper and lower socio-economic groups closer together. For example, in grade three socio-economic groups VI and VII have an identical average words per maze and the number underlined is for socio-economic group VI. In this research the evidence on cultural deprivation is so pervasive, it is felt that there is no need to press the point by making the groups appear wider apart than they are already.

[2] Since the Total group of subjects has not been completely transcribed and analyzed, data have not been presented beyond grade nine. The N's (actual) decline from kindergarten to grade nine because of the attrition rate in the study. By socio-economic status the N's range as follows: I--from 30 to 25, II--from 44 to 34, III--from 43 to 32, IV--from 24 to 21, V--from 53 to 45, VI--from 46 to 37, and VII--from 21 to 18.

## Maze Words as a Percentage of Total Words in Transcript by Socio-Economic Groupings

Just as in the case of the average number of words per communication unit, the evidence on maze words as a percentage of total words in transcript shows a precise, clearly defined dichotomy when related to the subjects' socio-economic status. Those in socio-economic groups I, II, and III almost invariably have a lower proportion of maze words in their spoken language than do those subjects in socio-economic groups V, VI, and VII. This is the case in every year studied (kindergarten through grade nine) with no overlapping whatsoever between the upper and lower socio-economic classifications except for a single case in grade nine where socio-economic groups V and VII have a slightly lower proportion of maze words than socio-economic group II. Again, this points up the fact that subjects of low socio-economic status have substantially greater difficulty in gaining control over language than do subjects of high socio-economic status. (See Table 16.)

## TABLE 16

## MAZE WORDS AS A PERCENTAGE OF TOTAL WORDS IN TRANSCRIPT BY SOCIO-ECONOMIC STATUS

(Mean--in per cent)

| Socio-Econ. Status | Grade[1] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | K | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| I | 7.12 | 6.11 | 5.53 | 5.26 | 6.16 | 6.53 | 6.95 | 6.55 | 7.06 | 5.90 |
| II | 7.65 | 6.54 | 5.79 | 4.86 | 5.54 | 6.12 | 6.31 | 6.66 | 6.68 | 6.21 |
| III | 7.56 | 6.93 | 5.24 | 4.89 | 5.68 | 6.18 | 5.72 | 5.79 | 5.35 | 5.39 |
| IV | 8.33 | 7.11 | 7.20 | 6.18 | 6.17 | 7.03 | 7.28 | 7.04 | 6.68 | 5.96 |
| V | 8.06 | 7.66 | 6.98 | 6.86 | 7.55 | 7.01 | 7.55 | 6.95 | 6.81 | 6.07 |
| VI | 8.44 | 7.84 | 7.20 | 7.16 | 8.61 | 8.47 | 8.24 | 8.38 | 7.93 | 7.17 |
| VII | 8.74 | 7.26 | 8.14 | 6.48 | 7.73 | 7.66 | 8.24 | 8.28 | 7.13 | 6.13 |

---

[1] Since the Total group of subjects has not been completely transcribed and analyzed, data have not been presented beyond grade nine. The N's (actual) decline from kindergarten to grade nine because of the attrition rate in the study. By socio-economic status the N's range as follows: I--from 30 to 25, II--from 44 to 34, III--from 43 to 32, IV--from 24 to 21, V--from 53 to 45, VI--from 46 to 37, and VII--from 21 to 18.

## PART V. RESULTS OF THE INVESTIGATION
## PROFICIENCY WITH WRITTEN LANGUAGE

In at least one crucial feature proficiency with written language is similar to proficiency with oral language: the writer must clearly organize his thoughts for the person with whom he is trying to communicate. In other features, some of the skills required in writing differ markedly from those in oral language. In speaking, it is possible to insert an aside to one's thoughts or to jump backward to clarify a point before going onward with the stream of spoken language. In writing, such interpolations and flashbacks are difficult to accomplish without loss of coherence; and thus, in attempting to judge a subject's written language proficiency, a specially designed set of criteria must be used. Such a gauge of effective written language, The Index of Writing Ability, has been used in the present research. (See the section Methods, under the heading Scales Developed during the Course of this Investigation.)

The findings on proficiency with written language are based upon the compositions obtained from each subject during the course of the investigation. These were obtained in the spring of each school year beginning in grade three; in later years of the study it was possible to secure more than one composition per year from each of the subjects.[1]

### Average Number of Words per Communication Unit--Written Language

Examining the data on average number of words per written communication unit, the reader can see that the High, Low, Central, and Total groups of subjects all show a steady upward trend on this measure. (See Table 17 and Figure 12.) In all years the High group shows its superiority on this measure of written language ability, beginning at a higher point than any other group in grade four and continuing at a higher point through grade twelve. The Central and Total groups fall in the middle or average range; and at the opposite extreme of written language proficiency is the Low group, producing the least number of words per communication unit for each year studied.

Although all groups show the steady upward trend noted above, one interesting feature of the data on written language is the apparent tendency of the Low, Central, and Total groups to have periods of advance followed by periods of apparent retrenchment and consolidation. This may be seen by comparing Figure 12 (average number of words per written communication unit) to Figure 6 (average number of words per oral communication unit). In oral language the trend appears to be a straight-line upward movement whereas in written language the peaks and dips in the data are much more obvious.

---

[1] In examining the data, the reader should note that grade three has not been presented. This proved to be a year too early for comparing relative writing ability; thus, the data presented begin with grade four.

Also of considerable interest is the close parallel between average number of words per communication unit in both written and oral language. In Table 18 the data on written and oral language have been placed side-by-side to facilitate comparison, and from this it can be seen that there is seldom a spread of even one word per unit when comparing the written and oral data for any given group. Looking more closely, however, one may learn something which at first escapes one's attention. In grade four the average words per unit for all groups is higher on oral language than on written language. In grades five, six, and seven the pattern is mixed:

. . . with oral sometimes surpassing written and written sometimes surpassing oral

. . . with written surpassing oral two out of three years for the High group

. . . with oral surpassing written all three years for the Low group

Then in grade eight all groups except the High shift to written superiority of average number of words per unit; and in grades nine, ten, eleven, and twelve all groups make a complete shift away from their fourth grade pattern and use a higher average number of words per unit on written language. This three-stage transition--beginning at one position, then showing a mixed pattern, and then ending at an opposite position--may be one of the more important findings of the research, indicating that subjects first have difficulty with writing, then tend to write in a way which parallels their spoken language, and conclude by gaining a proficiency in writing which makes it a more elaborated form of communication than their spoken language.

For purposes of comparison Table 17 also includes the findings of Kellogg Hunt on the average number of words per written communication unit.[1] From examining these comparative

---

[1] Hunt, op. cit., p. 45. As noted in the section on Methods, Hunt uses the term T-unit rather than communication unit.

## TABLE 17

### AVERAGE NUMBER OF WORDS PER COMMUNICATION UNIT--WRITTEN LANGUAGE (Mean)

| Grade | High Group (N=35) | Low Group (N=35) | Central Group[1] | Total Group[1] | Kellogg Hunt's Study[2] (N=18) |
|---|---|---|---|---|---|
| 4 | 8.38 | 5.59 | 7.26 | 7.23 | 8.6 |
| 5 | 9.30 | 6.37 | 7.97 | 7.97 | -- |
| 6 | 9.71 | 7.07 | 8.55 | 8.55 | -- |
| 7 | 10.33 | 7.40 | 8.69 | 8.75 | -- |
| 8 | 10.60 | 9.11 | 9.93 | 9.93 | 11.5 |
| 9 | 10.87 | 8.90 | 9.86 | 9.88 | -- |
| 10 | 12.24 | 10.75 | 11.75 | 11.67 | -- |
| 11 | 13.28 | 11.45 | 12.84 | 12.69 | -- |
| 12 | 13.76 | 11.05 | 12.33 | 12.36 | 14.4 |

---

[1]

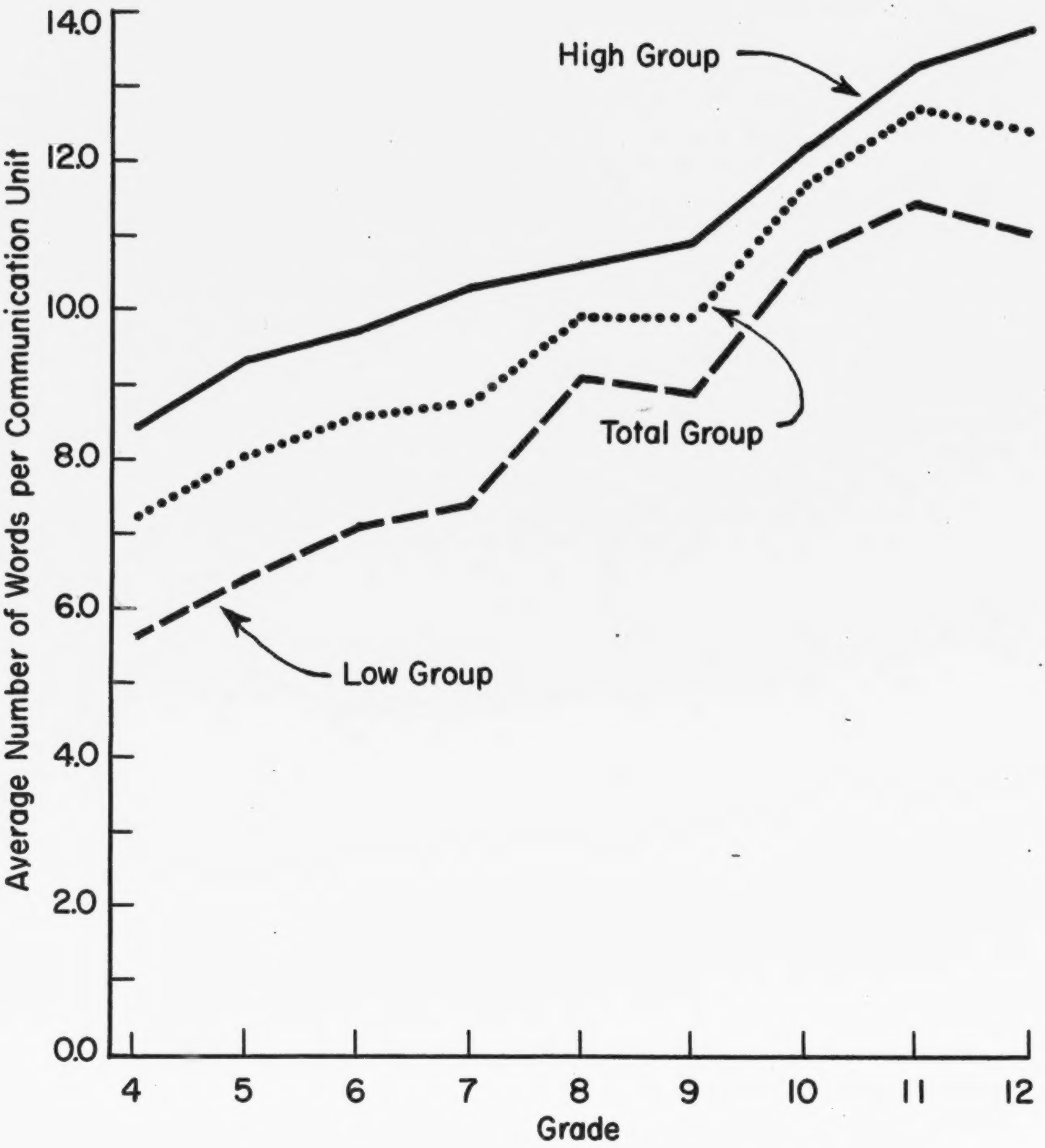
|  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|
| Central Group N | 163 | 169 | 163 | 159 | 152 | 150 | 143 | 141 | 142 |
| Total Group N | 221 | 233 | 225 | 228 | 217 | 217 | 212 | 209 | 211 |

The N's vary as a result of eliminating any composition not containing at least three communication units--a decision based on the assumption that a composition shorter than three units would not be long enough to represent the subject's written language.

[2] Hunt, op. cit., p. 45.

FIGURE 12

AVERAGE NUMBER OF WORDS PER COMMUNICATION UNIT--WRITTEN LANGUAGE
(Mean)



## TABLE 18

### A COMPARISON OF WRITTEN AND ORAL LANGUAGE ON AVERAGE NUMBER OF WORDS PER COMMUNICATION UNIT
(Mean)

| | High Group | | Low Group | | Central Group[1] | | Total Group[1] | |
|---|---|---|---|---|---|---|---|---|
| Grade | Written | Oral | Written | Oral | Written | Oral | Written | Oral |
| 4 | 8.38 | 8.52 | 5.59 | 6.55 | 7.26 | 7.74 | 7.23 | 7.68 |
| 5 | 9.30 | 8.72 | 6.37 | 6.75 | 7.97 | 7.96 | 7.97 | 7.89 |
| 6 | 9.71 | 9.39 | 7.07 | 7.37 | 8.55 | 8.37 | 8.55 | 8.37 |
| 7 | 10.33 | 10.45 | 7.40 | 8.12 | 8.69 | 9.02 | 8.75 | 9.10 |
| 8 | 10.60 | 10.85 | 9.11 | 8.54 | 9.93 | 9.31 | 9.93 | 9.43 |
| 9 | 10.87 | 10.84 | 8.90 | 8.37 | 9.86 | 9.41 | 9.88 | 9.47 |
| 10 | 12.24 | 11.09 | 10.75 | 8.39 | 11.75 | -- | 11.67 | 9.58 |
| 11 | 13.28 | 12.16 | 11.45 | 9.46 | 12.84 | -- | 12.69 | 10.82 |
| 12 | 13.76 | 12.94 | 11.05 | 10.34 | 12.33 | -- | 12.36 | 11.09 |

---

[1] As indicated previously the oral transcripts have not as yet been completely typed and analyzed; the Random group of 35 has therefore been substituted for the Total group in grades ten, eleven, and twelve. In each case, the higher of two scores--oral or written--has been underlined in order to facilitate visual comparison.

data, it can be seen that in grades four, eight, and twelve Hunt's findings place the average number of words per unit substantially higher than that of the Central or Total groups in the present research; in addition, the findings of Hunt's study are slightly higher than that of the High group in this research.[1]

## Comparison of Average Number of Words per Written Communication Unit by Socio-Economic Status

The socio-economic data on average number of words per written communication unit follow the same basic pattern seen in the other socio-economic data already presented: those of high socio-economic status show a substantially greater degree of proficiency than those of low socio-economic status. (See Table 19.)[2]

## Ratings of Written Compositions

As noted in the section on Methods, two qualified judges independently rated every composition accumulated during the course of the investigation; and in rare cases of disagreement, a third judge (the investigator) provided still another rating which could then be used to reach agreement. The final rating

---

[1] Hunt's study was confined to grades four, eight, and twelve, and thus these three years are the only possible points at which to make comparison.

[2] A curious instance of irregular language behavior should be noted in Table 19. In grade nine the subjects in socio-economic group VII actually have the highest average words per unit of any socio-economic group. This is rather startling since it seems to contradict the socio-economic evidence found in every other year of the study. When one looks more closely, however, this irregularity turns out to be simply a quirk in the data which one must occasionally expect to encounter. In grade nine four subjects from socio-economic group VII produced an abnormally high average number of words per written communication unit--higher than they had ever produced previously and higher than they were ever to achieve later. This fact, together with the fact that the ninth grade N for socio-economic group was only nineteen, made it possible for these four subjects to exert a substantial influence on the overall average for that year. If those four subjects were eliminated, the remaining fifteen subjects in socio-economic group VII (in grade nine) would have an average of 9.93 words per unit which would be much closer to what one would expect.

## TABLE 19

### AVERAGE NUMBER OF WORDS PER COMMUNICATION UNIT BY SOCIO-ECONOMIC STATUS WRITTEN LANGUAGE (Mean)

| | Grade[1] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Socio-Economic Status | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| I | 7.59 | 9.18 | 9.50 | 10.10 | 10.32 | 10.24 | 12.73 | 13.11 | 13.58 |
| II | 7.73 | 8.10 | 8.70 | 9.33 | 10.80 | 10.37 | 12.57 | 13.51 | 12.84 |
| III | 7.55 | 8.21 | 8.88 | 9.02 | 10.27 | 10.05 | 11.19 | 13.06 | 13.02 |
| IV | 7.30 | 8.21 | 8.81 | 9.07 | 10.57 | 10.02 | 11.25 | 12.58 | 12.91 |
| V | 7.16 | 7.82 | 8.13 | 8.21 | 9.43 | 9.73 | 11.58 | 12.56 | 11.47 |
| VI | 6.15 | 7.08 | 8.06 | 7.92 | 9.00 | 8.64 | 11.07 | 11.75 | 11.75 |
| VII | 7.12 | 7.55 | 8.06 | 8.13 | 9.77 | 11.21 | 11.60 | 12.57 | 11.49 |

---

[1] N's ranged by socio-economic status as follows: I -- from 27 to 24, II -- from 42 to 32, III -- from 37 to 30, IV -- from 23 to 21, V -- from 48 to 40, VI -- from 43 to 34, and VII -- from 19 to 15.

assigned according to The Index of Writing Ability ranged from I (Superior) to V (Illiterate). It should be noted, however, that in presenting data on the mean scores it was necessary to convert the Roman numerals to Arabic numbers. Thus, when examining the ratings, the reader needs to remember that I (or 1) equals Superior and V (or 5) equals Illiterate.

On the ratings of the subjects' written compositions, the High group once again shows its superiority. In every year those rated as proficient in language are substantially above the level of the Low, Central, and Total groups of subjects. Again, the Central and Total groups are the middle or average range, and at the opposite extreme the Low group shows an obvious lack of proficiency. (See Table 20 and Figure 13.)

Examining the data more closely (this may be accomplished by moving a ruler slowly downward across Figure 13), one can see that the High group has frequent peaks above writing level II, moving on numerous occasions into the lower part of the superior writing range (I). The Total group (and this is also true of the Central group) stays within the range of writing level II and writing level III in each year except in grade four when they are slightly below this point. In no year does the Total (or Central) group cross beyond writing level II. The Low group is once again at the opposite extreme. Thus the evidence on written compositions forms almost a perfect progression with each successive group separated by one full point on the scale: the High group is Superior-High Average; the Total group is High Average-Low Average; and the Low group is Low Average-Marginal.[1]

## A Second Method for Comparing the Ratings of Written Language

One question which might arise from the previous analysis is whether or not the ratings of the subjects' compositions were centered in one particular category of the rating scale. In other words, if a particular mean score were shown as 2.00 (II), one might wonder if this were the result of virtually everyone in the group (in that grade) having a precise score of 2.00 or if it were actually the result of half the group scoring 1.00 and the other half scoring 3.00 (which would also result in a mean score of 2.00).

---

[1] As the investigator indicated previously, in grades ten, eleven, and twelve it was possible to secure more than one composition per subject. A precise breakdown of these data is contained in Appendix I.

## TABLE 20

## RATINGS OF WRITTEN COMPOSITIONS[1]
(Mean)

| Grade[2] | High Group (N=35) | Low Group (N=35) | Central Group[3] | Total Group[3] |
|---|---|---|---|---|
| 4 | 2.36 | 3.97 | 3.05 | 3.09 |
| 5 | 2.06 | 3.63 | 2.65 | 2.71 |
| 6 | 1.74 | 3.54 | 2.47 | 2.52 |
| 7 | 1.57 | 3.06 | 2.18 | 2.22 |
| 8 | 1.71 | 3.29 | 2.46 | 2.47 |
| 9 | 1.77 | 3.11 | 2.31 | 2.35 |
| 10 | 2.06 | 3.56 | 2.80 | 2.80 |
| 11 | 2.16 | 3.48 | 2.70 | 2.74 |
| 12 | 2.02 | 3.36 | 2.70 | 2.70 |

---

[1] Note that the highest possible score would be 1.00; this would be the case if every subject in a group were rated Superior. Conversely, the lowest possible score would be 5.00; this would be the case if every subject in a group were rated Illiterate.

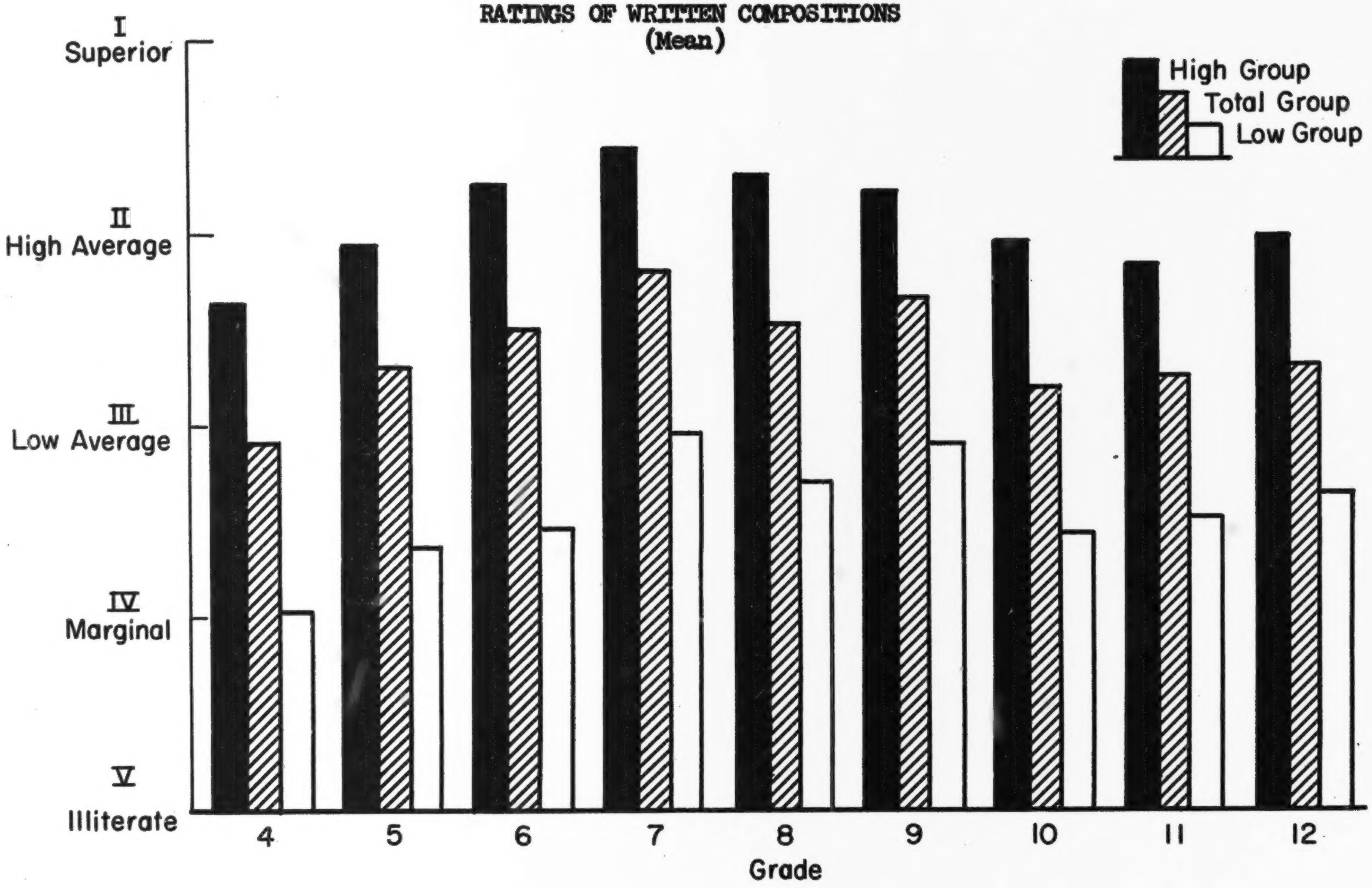
[2] In grades ten, eleven, and twelve it was possible to secure more than one composition per subject. In these years the subjects' compositions were individually rated and averaged before being included in the data presented.

[3]

| | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|
| Central Group N | 173 | 176 | 167 | 160 | 154 | 150 | 144 | 142 | 14[illegible] |
| Total Group N | 240 | 246 | 237 | 230 | 224 | 220 | 214 | 210 | 212 |

FIGURE 13

RATINGS OF WRITTEN COMPOSITIONS
(Mean)



In Tables 21 and 22, data are presented on the actual number of compositions rated on the I to V scale. This has been done on a group-by-group basis using raw numbers as well as percentage breakdowns to facilitate comparisons. It should be noted, however, that three-year periods have been used in order to keep the presentation within reasonable limits; thus grades four, five, and six are combined as are grades seven, eight, and nine and then ten, eleven, and twelve. A final comparison of all compositions accumulated during the entire course of the research (grades four through twelve) has been made in Table 23.

All subjects write at their best relative levels in grades seven, eight, and nine.[1] During this three-year period, each group has a greater percentage of compositions in the higher categories than in either of the other three-year periods studied. In part this might be traced to a reduced emphasis on writing (in the schools generally) during the high school years as compared to the junior high school years. Another possible explanation is the subjects' tendency to become careless, a tendency noted previously in connection with the mazes of oral language. As the subjects grow older and more adept at using language, they may also have a tendency to become more careless in their written language.

Also of interest when examining the data in Table 22 is a comparison of the High, Low, Central, and Total groups. The High group obviously has a far greater percentage of its compositions in the upper categories of the rating scale than do any of the other groups studied. Again, the Central and Total groups fall into the middle or average range; and at the opposite extreme is the Low group with the bulk of these subjects having compositions in the Low Average-Marginal range.

Looking at the data on grand totals of compositions (Table 23) the difference between the High and Low groups becomes even more apparent: the High group has over 80 per cent of its total compositions rated I (Superior) or II (High Average); the Low group has only 6.68 per cent of its compositions rated at these two higher levels, with the remainder falling into the lower three categories of the rating scale. Out of a total of 434 compositions written in grades four through twelve, the Low group has never been

---

[1] In the rating of the compositions, the age of the subjects was naturally taken into consideration. In other words, a twelfth grader was expected to write at a more advanced level than a fourth grader.

## TABLE 21

## ACTUAL NUMBER OF COMPOSITIONS IN EACH CATEGORY OF THE RATING SCALE[1]

(In raw numbers)

| Writing Category | Grades 4,5,6 Combined |  |  |  | Grades 7,8,9 Combined |  |  |  | Grades 10,11,12 Combined |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | High Group | Low Group | Central Group | Total Group | High Group | Low Group | Central Group | Total Group | High Group | Low Group | Central Group | Total Group |
| I: Superior | 19 | 0 | 15 | 34 | 37 | 0 | 41 | 78 | 49 | 0 | 25 | 74 |
| II: High Average | 61 | 6 | 194 | 261 | 64 | 18 | 249 | 331 | 136 | 5 | 282 | 423 |
| III: Low Average | 22 | 37 | 237 | 296 | 4 | 57 | 162 | 223 | 56 | 125 | 620 | 801 |
| IV: Marginal | 1 | 42 | 57 | 100 | 0 | 26 | 12 | 38 | 0 | 86 | 50 | 136 |
| V: Illiterate | 0 | 19 | 13 | 32 | 0 | 4 | 0 | 4 | 0 | 9 | 0 | 9 |
| Total | 103 | 104 | 516 | 723 | 105 | 105 | 464 | 674 | 241 | 225 | 977 | 1443 |

---

[1] Note that three-year periods have been combined before presenting the data; note also that in grades ten, eleven, and twelve more than one composition was obtained per subject, producing a larger number of compositions for each group than in grades four, five, and six or seven, eight, and nine.

## TABLE 22

### ACTUAL NUMBER OF COMPOSITIONS IN EACH CATEGORY OF THE RATING SCALE[1]
(In per cent)

| Writing Category | Grades 4,5,6 Combined | | | | Grades 7,8,9 Combined | | | | Grades 10,11,12 Combined | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | High Group | Low Group | Central Group | Total Group | High Group | Low Group | Central Group | Total Group | High Group | Low Group | Central Group | Total Group |
| I: Superior | 18.45 | 0.00 | 2.91 | 4.70 | 35.24 | 0.00 | 8.84 | 11.57 | 20.33 | 0.00 | 2.56 | 5.13 |
| II: High Average | 59.22 | 5.77 | 37.60 | 36.10 | 60.95 | 17.14 | 53.66 | 49.11 | 56.43 | 2.22 | 28.86 | 29.31 |
| III: Low Average | 21.36 | 35.58 | 45.93 | 40.94 | 3.81 | 54.29 | 34.91 | 33.09 | 23.24 | 55.56 | 63.46 | 55.51 |
| IV: Marginal | 0.97 | 40.38 | 11.04 | 13.83 | 0.00 | 24.76 | 2.59 | 5.64 | 0.00 | 38.22 | 5.12 | 9.43 |
| V: Illiterate | 0.00 | 18.27 | 2.52 | 4.43 | 0.00 | 3.81 | 0.00 | 0.59 | 0.00 | 4.00 | 0.00 | 0.62 |
| Total | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

---

[1] Note that three-year periods have been combined before presenting the data.

## TABLE 23

## ACTUAL NUMBER OF COMPOSITIONS IN EACH CATEGORY OF THE RATING SCALE

### Grand Total for Grades Four through Twelve

( In raw numbers )

| Writing Category | High Group | Low Group | Central Group | Total Group |
|---|---|---|---|---|
| I: Superior | 105 | 0 | 81 | 186 |
| II: High Average | 261 | 29 | 725 | 1015 |
| III: Low Average | 82 | 219 | 1019 | 1320 |
| IV: Marginal | 1 | 154 | 119 | 274 |
| V: Illiterate | 0 | 32 | 13 | 45 |
| Total | 449 | 434 | 1957 | 2840 |

### Grand Total for Grades Four through Twelve

( In per cent )

| Writing Category | High Group | Low Group | Central Group | Total Group |
|---|---|---|---|---|
| I: Superior | 23.39 | 0.00 | 4.14 | 6.55 |
| II: High Average | 58.13 | 6.68 | 37.05 | 35.74 |
| III: Low Average | 18.26 | 50.46 | 52.07 | 46.48 |
| IV: Marginal | 0.22 | 35.49 | 6.08 | 9.65 |
| V: Illiterate | 0.00 | 7.37 | 0.66 | 1.58 |
| Total | 100.00 | 100.00 | 100.00 | 100.00 |

*able to achieve a single rating at the Superior (I) level.* Conversely, the High group has never had a single composition rated Illiterate (V) and only one composition out of a total of 449 rated as Marginal (IV).

## Comparison of Written Language Ratings by Socio-Economic Status

The socio-economic evidence on the ratings of the subjects' written language has been studied by the same two methods used in making comparisons among the High, Low, Central, and Total groups of subjects. These two methods are (1) examining the *mean scores* of written compositions from the standpoint of socio-economic status and (2) examining the *actual* number of written compositions as they relate to socio-economic status, presenting the data in raw numbers of compositions as well as in percentages. In this instance, just as in the previous analysis, the reader should bear in mind that it was necessary to convert Roman numerals into Arabic numbers in order to present the data on mean scores; thus I (Superior) equals 1.00; V (Illiterate) equals 5.00. The reader should also remember that in grades ten, eleven, and twelve it was possible to obtain more than one composition per subject; thus, 10-1 equals the first composition obtained in grade ten.

The data on mean scores show the subjects' socio-economic status to be clearly related to the ratings of their written compositions. (See Table 24.) From grade four through grade twelve, *in every case without exception* those in socio-economic group I have the highest ratings on their written compositions. In addition, there is *no overlapping whatsoever* between the upper three socio-economic groups and the lower three socio-economic groups. In every year studied, those in socio-economic groups I, II, and III *always* receive higher ratings on their written compositions than do the subjects in socio-economic groups V, VI, and VII. Thus the evidence on *mean scores* makes quite obvious a clear relationship between socio-economic status and proficiency with written language.

The second method of examining the data on written compositions from the standpoint of socio-economic status is to compare the subjects' socio-economic status to the actual number of compositions falling into each category of the rating scale (from Superior to Illiterate). The data have been presented in raw numbers (Table 25) as well as in percentages (Table 26). Again, three-year groupings have been combined in order to keep the presentation within reasonable limits; thus grades four, five, and six are combined as are grades seven, eight, and nine and grades ten, eleven, and twelve. Following Tables 25 and 26 the data have also been presented for all years combined (grades four

## TABLE 24

## RATINGS OF WRITTEN COMPOSITIONS BY SOCIO-ECONOMIC STATUS

(Mean)[1]

| Socio-Econ. Status[3] | Grade[2] | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 4 | 5 | 6 | 7 | 8 | 9 | 10-1 | 10-2 | 11-1 | 11-2 | 11-3 | 12-1 | 12-2 |
| I | 2.35 | 2.30 | 1.88 | 1.77 | 1.76 | 2.00 | 2.44 | 2.16 | 2.25 | 2.25 | 1.77 | 1.96 | 2.16 |
| II | 2.84 | 2.43 | 2.25 | 1.95 | 2.17 | 2.09 | 2.45 | 2.48 | 2.55 | 2.48 | 2.31 | 2.44 | 2.41 |
| III | 2.78 | 2.49 | 2.13 | 2.00 | 2.24 | 2.09 | 2.66 | 2.34 | 2.39 | 2.55 | 2.12 | 2.47 | 2.30 |
| IV | 2.96 | 2.50 | 2.45 | 1.95 | 2.50 | 2.23 | 3.00 | 2.71 | 2.67 | 2.71 | 2.41 | 2.62 | 2.86 |
| V | 3.30 | 2.94 | 2.86 | 2.49 | 2.70 | 2.51 | 2.93 | 2.79 | 2.88 | 2.88 | 2.71 | 2.93 | 2.95 |
| VI | 3.68 | 3.13 | 3.02 | 2.65 | 2.95 | 2.77 | 3.30 | 3.26 | 3.17 | 3.15 | 3.04 | 3.17 | 3.07 |
| VII | 3.50 | 3.00 | 2.79 | 2.42 | 2.74 | 2.53 | 3.39 | 3.17 | 3.06 | 3.06 | 2.86 | 3.06 | 2.94 |

---

[1] Roman numerals were converted to Arabic numbers in order to compute the mean; I (Superior) = 1.00; V (Illiterate) = 5.00.

[2] As indicated previously in grades ten, eleven, and twelve, it was possible to obtain more than one composition per subject; thus 10-1 equals the first composition obtained in grade ten.

[3] N's = I (27 to 22); II (42 to 32); III (40 to 26); IV (24 to 17); V (50 to 35); VI (45 to 26); VII (19 to 14). Note that in the latter years of the study the N is usually higher than it appears. The lowest N (which is shown in the summary of N's) is for the composition done at school (11-3). There was some difficulty in getting these particular compositions.

## TABLE 25

## ACTUAL NUMBER OF COMPOSITIONS IN EACH CATEGORY OF THE RATING SCALE BY SOCIO-ECONOMIC STATUS

(In raw numbers)

### Grades 4, 5, & 6 Combined[1]

Socio-Economic Status

| Writing Category | I | II | III | IV | V | VI | VII | Total |
|---|---|---|---|---|---|---|---|---|
| I: Superior | 9 | 9 | 10 | 1 | 4 | 1 | 0 | 34 |
| II: High Average | 49 | 55 | 52 | 29 | 44 | 23 | 9 | 261 |
| III: Low Average | 19 | 46 | 46 | 35 | 56 | 58 | 36 | 296 |
| IV: Marginal | 2 | 7 | 8 | 4 | 33 | 38 | 8 | 100 |
| V: Illiterate | 0 | 3 | 1 | 1 | 12 | 12 | 3 | 32 |
| Total | 79 | 120 | 117 | 70 | 149 | 132 | 56 | 723 |

### Grades 7, 8, & 9 Combined[1]

Socio-Economic Status

| Writing Category | I | II | III | IV | V | VI | VII | Total |
|---|---|---|---|---|---|---|---|---|
| I: Superior | 20 | 24 | 15 | 10 | 8 | 1 | 0 | 78 |
| II: High Average | 48 | 58 | 63 | 32 | 61 | 44 | 25 | 331 |
| III: Low Average | 8 | 19 | 22 | 23 | 53 | 66 | 32 | 223 |
| IV: Marginal | 0 | 3 | 2 | 1 | 15 | 17 | 0 | 38 |
| V: Illiterate | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 4 |
| Total | 76 | 106 | 102 | 66 | 138 | 129 | 57 | 674 |

### Grades 10, 11 & 12 Combined[1]

Socio-Economic Status

| Writing Category | I | II | III | IV | V | VI | VII | Total |
|---|---|---|---|---|---|---|---|---|
| I: Superior | 22 | 19 | 18 | 5 | 10 | 0 | 0 | 74 |
| II: High Average | 101 | 101 | 96 | 39 | 66 | 15 | 5 | 423 |
| III: Low Average | 47 | 103 | 91 | 90 | 167 | 203 | 100 | 801 |
| IV: Marginal | 0 | 7 | 7 | 9 | 43 | 55 | 15 | 136 |
| V: Illiterate | 0 | 2 | 0 | 0 | 3 | 4 | 0 | 9 |
| Total | 170 | 232 | 212 | 143 | 289 | 277 | 120 | 1443 |

---

[1] Note that three-year periods have been combined before presenting the data; note also that in grades ten, eleven, and twelve more than one composition was obtained per subject, producing a larger number of compositions for each group than in grades four, five, and six or seven, eight, and nine.

# TABLE 26

## ACTUAL NUMBER OF COMPOSITIONS IN EACH CATEGORY OF THE RATING SCALE BY SOCIO-ECONOMIC STATUS
(In per cent)

Grades 4, 5, & 6 Combined

| Writing Category | Socio-Economic Status I | II | III | IV | V | VI | VII | Total[1] |
|---|---|---|---|---|---|---|---|---|
| I:Superior | 11.39 | 7.50 | 8.55 | 1.43 | 2.69 | 0.76 | 0.00 | 4.70 |
| II:High Average | 62.03 | 45.84 | 44.44 | 41.43 | 29.53 | 17.42 | 16.07 | 36.10 |
| III: Low Average | 24.05 | 38.33 | 39.32 | 50.00 | 37.58 | 43.94 | 64.29 | 40.94 |
| IV:Marginal | 2.53 | 5.83 | 6.84 | 5.71 | 22.15 | 28.79 | 14.28 | 13.83 |
| V:Illiterate | 0.00 | 2.50 | 0.85 | 1.43 | 8.05 | 9.09 | 5.36 | 4.43 |
| Total | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

Grades 7, 8, & 9 Combined

| Writing Category | Socio-Economic Status I | II | III | IV | V | VI | VII | Total[1] |
|---|---|---|---|---|---|---|---|---|
| I:Superior | 26.31 | 22.64 | 14.71 | 15.15 | 5.80 | 0.78 | 0.00 | 11.57 |
| II:High Average | 63.16 | 54.72 | 61.76 | 48.49 | 44.20 | 34.11 | 43.86 | 49.11 |
| III: Low Average | 10.53 | 17.92 | 21.57 | 34.85 | 38.41 | 51.15 | 56.14 | 33.09 |
| IV:Marginal | 0.00 | 2.83 | 1.96 | 1.51 | 10.87 | 13.18 | 0.00 | 5.64 |
| V:Illiterate | 0.00 | 1.89 | 0.00 | 0.00 | 0.72 | 0.78 | 0.00 | 0.59 |
| Total | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

---

[1] Note that this particular Total column is not the summation of the percentages entered under each socio-economic classification. Each socio-economic group equals 100.00%; thus summing this Total column sideways would equal 700.00%. The total shown is actually the per cent of compositions in each category of the Superior to Illiterate rating scale. Thus in grades 4, 5, and 6 combined the number 4.70 means that 4.70% of all compositions were rated as being Superior (I).

## TABLE 26, continued

## ACTUAL NUMBER OF COMPOSITIONS IN EACH CATEGORY OF THE RATING SCALE BY SOCIO-ECONOMIC STATUS
(In per cent)

Grades 10, 11, & 12 Combined

| | Socio-Economic Status | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Writing Category | I | II | III | IV | V | VI | VII | Total[1] |
| I: Superior | 12.94 | 8.19 | 8.49 | 3.50 | 3.46 | 0.00 | 0.00 | 5.13 |
| II: High Average | 59.41 | 43.53 | 45.28 | 27.27 | 22.84 | 5.41 | 4.17 | 29.31 |
| III: Low Average | 27.65 | 44.40 | 42.93 | 62.94 | 57.78 | 73.28 | 83.33 | 55.51 |
| IV: Marginal | 0.00 | 3.02 | 3.30 | 6.29 | 14.88 | 19.86 | 12.50 | 9.43 |
| V: Illiterate | 0.00 | 0.86 | 0.00 | 0.00 | 1.04 | 1.45 | 0.00 | 0.62 |
| Total | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

---

[1] Note that this particular Total column is not the summation of the percentages entered under each socio-economic classification. Each socio-economic group equals 100.00%; thus summing this Total column sideways would equal 700.00%. The total shown is actually the per cent of compositions in each category of the Superior to Illiterate rating scale. Thus in grades 4, 5, and 6 combined number 4.70 means that 4.70% of all compositions were rated as being Superior (I).

through twelve) in both raw numbers and per cent. (See Table 27.)

Those in socio-economic group I receive a higher proportion of compositions rated Superior and High Average than do any of the other socio-economic groups studied. (See Table 26.) Conversely, those of low socio-economic status have substantially higher proportions of their compositions rated as Low Average or Marginal than do those of high socio-economic status. Thus, once again the data form an almost perfect socio-economic progression.[1]

The socio-economic data form an almost perfect progression if the same data are studied from the standpoint of all compositions obtained during the entire course of the research. (See the percentage comparisons made in the bottom half of Table 27.) Those in socio-economic group I have over 75 per cent of their compositions rated as Superior or High Average; those in socio-economic groups VI and VII have over 80 per cent of their compositions rated Low Average or Marginal. It is also worth pointing out that during the entire course of the investigation (grades four through twelve), those in socio-economic group I never receive a single rating of Illiterate; those in socio-economic group VII never receive a single rating of Superior.

---

[1] In some cases the raw data (Table 25) tend to obscure the socio-economic differences among the groups. For example, in raw numbers it would appear as if socio-economic group III actually receives higher ratings on their written compositions than socio-economic group I. This results from the fact that the N (the number of subjects) is substantially higher for socio-economic III than for socio-economic I. For example, in grades four, five, and six combined (Table 25), those in socio-economic group I have a raw total of only 9 Superior compositions whereas those in socio-economic group III have 10. It can be seen, however, that this is a question of 9 out of 79 compared to 10 out of 117. When the comparison is made on percentages (Table 26), this apparent disparity vanishes.

## TABLE 27

## ACTUAL NUMBER OF COMPOSITIONS IN EACH CATEGORY OF THE RATING SCALE BY SOCIO-ECONOMIC STATUS

### Grand Total for All Years Combined

(In raw numbers)

Socio-Economic Status

| Writing Category | I | II | III | IV | V | VI | VII | Total |
|---|---|---|---|---|---|---|---|---|
| I:Superior | 51 | 52 | 43 | 16 | 22 | 2 | 0 | 186 |
| II: High Average | 198 | 214 | 211 | 100 | 171 | 82 | 39 | 1015 |
| III: Low Average | 74 | 168 | 159 | 148 | 276 | 327 | 168 | 1320 |
| IV:Marginal | 2 | 17 | 17 | 14 | 91 | 110 | 23 | 274 |
| V:Illiterate | 0 | 7 | 1 | 1 | 16 | 17 | 3 | 45 |
| Total | 325 | 458 | 431 | 279 | 576 | 538 | 233 | 2840 |

### Grand Total for All Years Combined

(In per cent)

Socio-Economic Status

| Writing Category | I | II | III | IV | V | VI | VII | Total |
|---|---|---|---|---|---|---|---|---|
| I:Superior | 15.69 | 11.35 | 9.98 | 5.73 | 3.82 | 0.37 | 0.00 | 6.55 |
| II: High Average | 60.92 | 46.73 | 48.96 | 35.84 | 29.69 | 15.24 | 16.74 | 35.74 |
| III: Low Average | 22.77 | 36.68 | 36.89 | 53.05 | 47.91 | 60.78 | 72.10 | 46.48 |
| IV:Marginal | 0.62 | 3.71 | 3.94 | 5.02 | 15.80 | 20.45 | 9.87 | 9.65 |
| V:Illiterate | 0.00 | 1.53 | 0.23 | 0.36 | 2.78 | 3.16 | 1.29 | 1.58 |
| Total | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

## Summary: Proficiency with Written Language

Summarizing the evidence on written language, we can say that from grades four through twelve, all groups show a steady upward movement in average number of words per written communication unit. In addition, as the subjects grow older, each group improves the quality of its written compositions--although it should be noted that the subjects as a whole receive higher ratings on their compositions in grades seven, eight, and nine than in either the earlier period studied (grades four, five, and six) or in the later period studied (grades ten, eleven, and twelve). Thus _in relation to their age_ the subjects as a whole tend to write more _proficiently during_ the junior high school period than in either the late elementary or high school years.

In comparing the High, Low, Central, and Total groups, we can see that in every year studied the High group consistently has the highest average number of words per written communication unit as well as the highest ratings on their compositions (as scored by _The Index of Writing Ability_ designed for use in this research). The Central and Total groups fall into the middle or average range; and at the opposite extreme is the Low group, consistently having not only the lowest average number of words per communication unit but also the lowest ratings on their compositions.

From the standpoint of socio-economic status in relation to writing proficiency, an almost perfect socio-economic progression emerges for both average number of words per unit and the quality of the written compositions. Those of high socio-economic status invariably have a higher average number of words per written communication unit and receive higher ratings on their compositions than do subjects of low socio-economic status. Thus it seems quite obvious that there is a very definite relationship between socio-economic status and proficiency with written language.

# PART VI: RESULTS OF THE INVESTIGATION FINDINGS ON TESTS OF READING ACHIEVEMENT, LISTENING, USE OF SUBORDINATING CONNECTIVES, AND TEACHERS' RATINGS

## Reading Achievement

Beginning in grade four and continuing through grade eight, the Stanford and California Tests of Reading Achievement were administered to each subject in the study. Findings on these data, presented in the number of months each group reads above or below its chronological age, may be found in Table 28 and Figure 14.[1]

In examining the data, it can be seen that the High group invariably reads far above its chronological age (indicated by a plus sign in Table 28). The Central and Total groups of subjects are at the middle or average range, reading a few months above their chronological age in grades four through seven and then slightly below their chronological age in grade eight.[2] The Low group is once again at the opposite extreme of language proficiency, reading far below its chronological age in grade four and exhibiting progressively lower reading achievement scores in each ensuing year.

One feature of the data which at first appears puzzling is that the High group's reading achievement seems to reach a peak in grade six and then begins to decline in grades seven and eight. The reader should note that this results from the *design of the test* and should *not* be construed as an indication that the High group's reading ability has declined. On both the Stanford and California Tests of Reading Achievement, the *maximum* score is a reading achievement of sixteen years. In other words, regardless of how well he read, a subject who was fourteen years of age could not possibly score higher than two years above his chronological age; at age sixteen even the best reader would receive a score of zero. Thus, as *good readers* approach a

---

[1] A reading test was not administered to *every* subject in *each* of the five years; thus the N's vary. Some data were accumulated in grade nine, but it was felt that the N's were too low to warrant their inclusion.

[2] In a sample of the entire population one would expect the mean to approach 0.00; i.e., to have the *difference* between chronological age and reading achievement age approximately zero. In this research the mean for the Total group is very close to what one would expect from the population as a whole and thus is another indication that the sample is a representative one.

## TABLE 28

## READING ACHIEVEMENT SCORES USING THE STANFORD AND CALIFORNIA TESTS OF READING ACHIEVEMENT

### Number of Months Reading Age is Above or Below Chronological Age (Mean)

| Grade | High Group (N=35) | Low Group (N=35) | Central Group[1] | Total Group[1] |
|---|---|---|---|---|
| 4 | +23.52 | -19.33 | +0.65 | +3.14 |
| 5 | +32.22 | -20.08 | +4.24 | +5.64 |
| 6 | +36.20 | -24.12 | +4.37 | +5.45 |
| 7 | +33.07 | -32.41 | +1.31 | +1.19 |
| 8 | +25.57 | -32.63 | -0.68 | -1.08 |

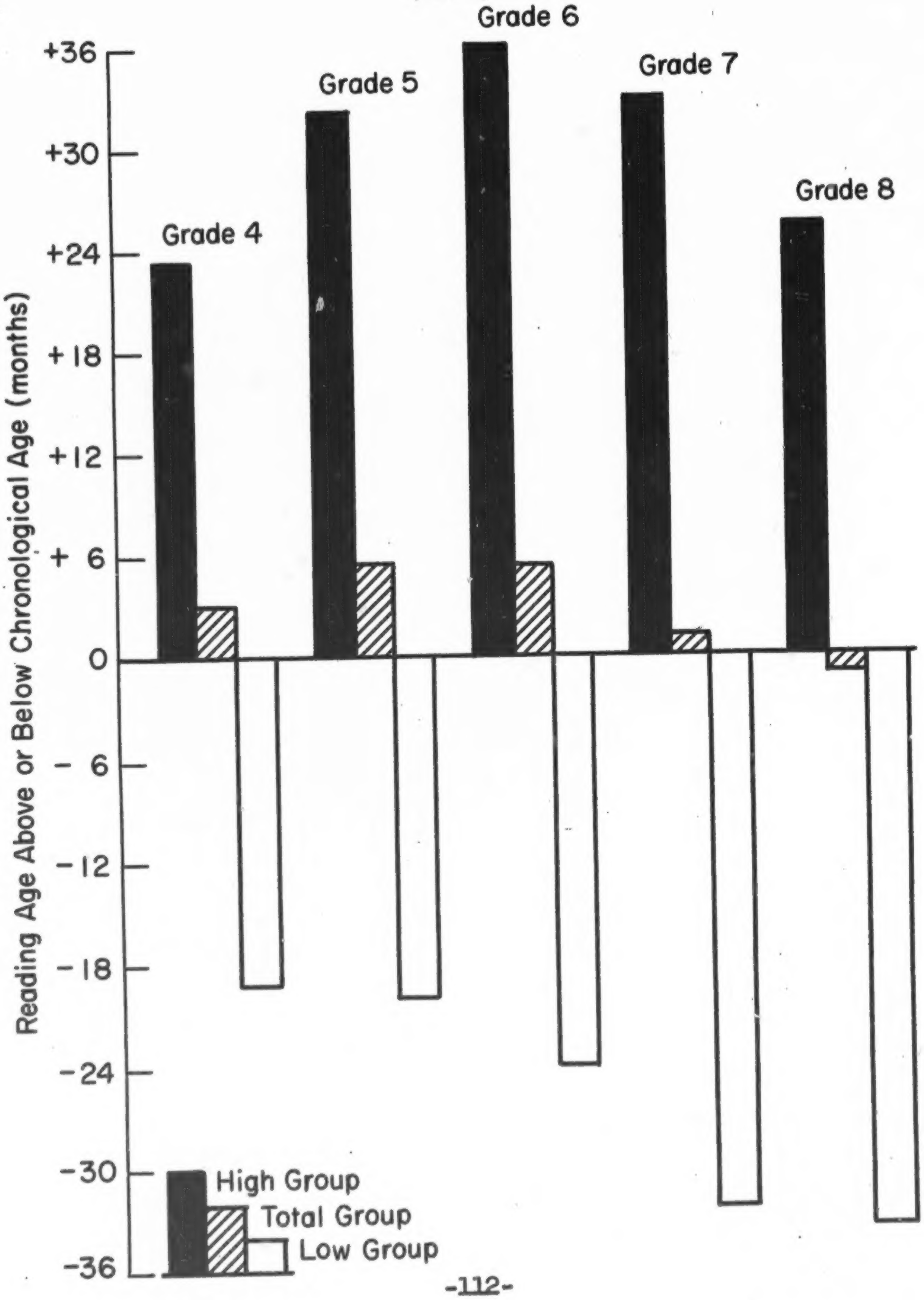
---

[1]

| | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|
| Central Group N = | 145 | 149 | 142 | 122 | 101 |
| Total Group N = | 188 | 206 | 198 | 177 | 141 |

FIGURE 14

READING ACHIEVEMENT SCORES USING THE STANFORD AND CALIFORNIA TESTS OF READING ACHIEVEMENT (Mean)



chronological age of sixteen, the value of the test grows progressively less as a means of differentiating among them. On the other hand, as poor readers grow older, reading tests become progressively more valid; i.e., the range of possible minus scores grows larger as chronological age increases. This accounts for the artificial peak achieved by the High group in grade six as well as for the actual worsening of the Low group's achievement during successive years of the study.

Also of interest is the socio-economic status of the subjects in relation to their reading achievement. (See Table 29.) Once again there is an obvious socio-economic progression, with those of high socio-economic status invariably achieving higher reading scores than those of low socio-economic status. In addition, in every year without exception, those in socio-economic groups I, II, III, and IV read above their chronological age (indicated by a plus sign in Table 29), whereas those in socio-economic groups V, VI, and VII read below their chronological age (indicated by a minus sign in Table 29).

The reader should also note a striking phenomenon to be found by examining the interquartile range. For those of high socio-economic status the central fifty per cent of the subjects in a given socio-economic group almost invariably reads above their chronological age; for those of low socio-economic status the central fifty per cent of the subjects has precisely the opposite pattern, almost invariably reading below their chronological age. Thus there is a wide disparity between a typical subject of any given high socio-economic group as compared to a typical subject in any given low socio-economic group.[1]

In conclusion, those rated high in language ability (the High group) achieve substantially higher scores on tests of reading achievement than do those rated low in language ability

---

[1] This has been the case throughout the research. The use of medians rather than means in presenting the data on reading achievement was not intended to show anything unusual. Rather it was designed to vary the presentation and thus indicate that regardless of the type of measure used (means or medians), the findings would follow the same pattern. Mathematically, of course, medians are sometimes the better choice for presenting a given piece of data in that the use of medians does not allow extreme scores to skew the data.

## TABLE 29

## READING ACHIEVEMENT BY SOCIO-ECONOMIC STATUS
Stanford and California Tests of Reading Achievement
Median, Interquartile Range, and Total Range

(Number of months reading age is above or below chronological age)[1]

**Median**

| Socio-Econ. Status | Grade 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|
| I | +26 | +32 | +38 | +37 | +27 |
| II | +14 | +16 | +23 | +28 | +26 |
| III | +11 | +20 | +18 | +23 | +26 |
| IV | + 4 | + 7 | +10 | +10 | + 2 |
| V | - 7 | - 8 | -11 | -15 | -14 |
| VI | -14 | -18 | -26 | -31 | -23 |
| VII | -15 | -16 | -17 | -21 | -23 |

**Interquartile Range**

| Socio-Econ. Status | Grade 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|
| I | + 9 to +37 | +16 to +39 | +25 to +48 | +23 to +42 | +21 to +29 |
| II | - 2 to +27 | + 4 to +28 | + 3 to +39 | +13 to +37 | + 7 to +30 |
| III | - 2 to +18 | 0 to +31 | 0 to +39 | + 2 to +38 | + 6 to +28 |
| IV | -10 to +15 | -10 to +26 | -10 to +19 | - 9 to +36 | -28 to +21 |
| V | -18 to + 3 | -18 to + 9 | -24 to +13 | -32 to +13 | -40 to +18 |
| VI | 0 to -30 | - 6 to -29 | - 7 to -33 | - 6 to -42 | - 6 to -42 |
| VII | 0 to -25 | - 6 to -24 | 0 to -24 | + 2 to -28 | +10 to -35 |

**Total Range**

| Socio-Econ. Status | Grade 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|
| I | -19 to +44 | -15 to +62 | -12 to +57 | - 9 to +44 | +18 to +31 |
| II | -35 to +43 | -25 to +53 | -60 to +57 | -26 to +48 | -70 to +34 |
| III | -29 to +39 | -27 to +45 | -29 to +55 | -36 to +51 | -21 to +37 |
| IV | -27 to +28 | -23 to +36 | -27 to +44 | -46 to +42 | -42 to +28 |
| V | -36 to +37 | -48 to +51 | -43 to +52 | -63 to +39 | -73 to +30 |
| VI | -41 to +24 | -41 to +18 | -47 to +29 | -66 to +39 | -66 to +28 |
| VII | -37 to +10 | -35 to +16 | -32 to +19 | -38 to +11 | -45 to +24 |

---

[1] Reading achievement scores are shown in the number of months each socio-economic group reads above or below chronological age

---

(indicated by plus or minus). For all socio-economic groups the N's vary from year to year because a reading achievement test was not administered to all students for every year. For the socio-economic groups shown the N's are typically as follows: I = 25; II = 35; III = 30; IV = 20; V = 40; VI = 30; VII = 17.

(the Low group). The Central and Total groups continue to follow their typical pattern, reading at the middle or average range. In addition a pronounced disparity in reading achievement scores follows socio-economic lines: those of high socio-economic status achieve high reading scores; those of low socio-economic status typically read at a point far below their expected age norm.

## Listening Tests

The STEP Tests of Listening Ability were administered in grades eight and nine and again in grades eleven and twelve. For each of these years converted mean scores have been presented for the High, Low, Central, and Total groups of subjects.[1] (See Table 30 and Figure 15.)

From examining the data, one can see that the High group once again exhibits substantially higher scores than any other group. The Central and Total groups are at the middle or average range, and once more the Low group shows the least degree of proficiency. Thus, the data on listening follow the same pattern that has been found throughout the research.

The socio-economic findings as they relate to listening are also exceedingly similar to other aspects of the research: the data once again form an almost perfect socio-economic progression. (See Table 31.) In addition, there is no overlapping whatsoever: those in socio-economic groups I, II, and III invariably receive higher listening test scores than do those in socio-economic groups V, VI, and VII. Thus it seems clear that listening is related not only to proficiency or lack of proficiency in language (data on the High, Low, Central, and Total groups) but also to the socio-economic status of the subjects studied.

---

[1] Raw scores were individually converted for each subject before computing group data. The method of conversion follows the procedure required by the test design; the test itself was designed by Educational Testing Service, Princeton, New Jersey.

## TABLE 30

## LISTENING TEST SCORES

### Converted Scores on STEP Listening Tests
### (Mean)

| Grade | High Group[1] | Low Group[1] | Central Group[1] | Total Group[1] |
|---|---|---|---|---|
| 8 | 299.08 | 263.60 | 282.05 | 284.04 |
| 9 | 296.68 | 260.00 | 286.00 | 285.55 |
| 11 | 305.00 | 271.82 | 287.05 | 289.09 |
| 12 | 304.62 | 274.33 | 289.09 | 289.85 |

---

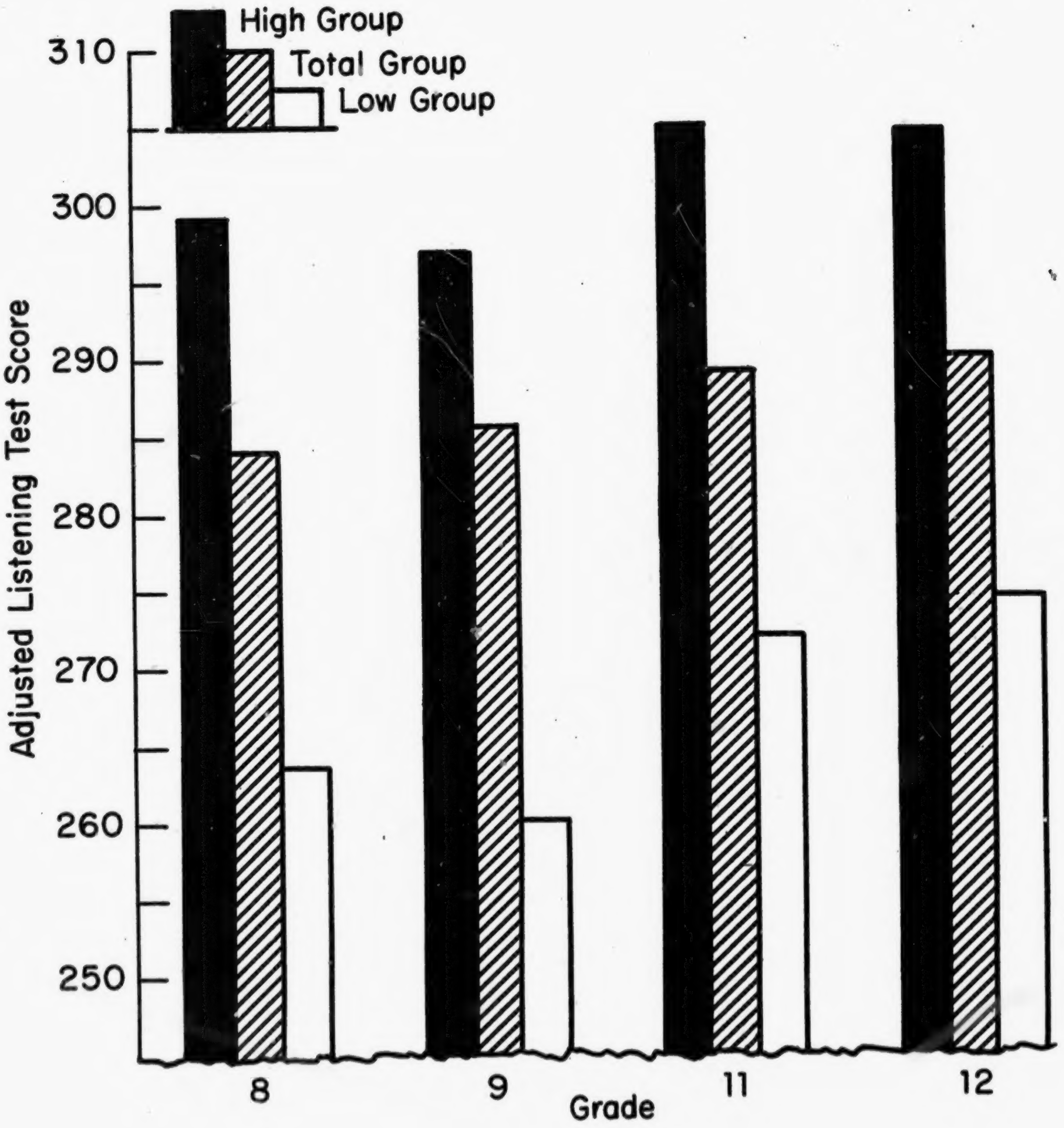
[1]

|  | 8 | 9 | 11 | 12 |
|---|---|---|---|---|
| High Group N = | 25 | 22 | 33 | 21 |
| Low Group N = | 10 | 11 | 17 | 15 |
| Central Group N = | 86 | 81 | 114 | 102 |
| Total Group N = | 121 | 114 | 164 | 138 |

## FIGURE 15

## LISTENING TEST SCORES

Converted Scores on STEP Listening Tests
(Mean)



## TABLE 31

## LISTENING TEST SCORES BY SOCIO-ECONOMIC STATUS

Converted Scores on STEP Listening Tests
(Mean)

| Socio-Econ. Status | Grade[1] 8 | 9 | 11 | 12 |
|---|---|---|---|---|
| I | 298.79 | 298.25 | 308.85 | 306.64 |
| II | 288.68 | 291.45 | 297.21 | 301.95 |
| III | 286.32 | 291.70 | 296.96 | 298.95 |
| IV | 282.50 | 288.43 | 287.57 | 288.25 |
| V | 283.40 | 282.60 | 283.11 | 285.28 |
| VI | 263.40 | 269.67 | 273.58 | 281.73 |
| VII | 270.22 | 277.22 | 272.77 | 279.71 |

---

[1] The N's for the socio-economic groups are as follows: I = 20 to 11; II = 28 to 20; III = 27 to 20; IV = 14 to 12; V = 37 to 15; VI = 26 to 15; VII = 14 to 9.

## Tests of Subordinating Connectives

Beginning in grade five, a test of subordinating connectives was administered to each subject in the study. The test contains fifty items and is designed to assess the correct usage of subordinating connectives such as *however*, *moreover*, and *although*. Testing was done on an annual basis using an adapted completion form of a multiple choice test initially devised by A. F. Watts.[1]

When examining the data on subordinating connectives, the reader should note that 50 is the maximum possible score. As a result the High group's room for improvement is relatively small and this gives the visual impression that the Low group is tending to "catch up." (See Table 32 and Figure 16.)

The data on subordinating connectives follow the same pattern that has been found throughout the research: those proficient in language (the High group) are at one extreme, the Central and Total groups fall into the middle or average range, and those least proficient in language (the Low group) fall at the opposite extreme. More striking, however, are the scores the various groups are able to achieve at grade five compared to the scores achieved at grade twelve. The High group in *grade five* scores over 41 whereas it is not until *grades eleven and twelve* that the Central and Total groups are able to achieve this level of proficiency. Even more striking is the fact that the Low group in grade twelve is only able to achieve a score of 32. In other words *after seven additional years of schooling the Low group still scores almost ten points below the High group's fifth grade level*.

The ability to use subordinating connectives appropriately is also of interest from the standpoint of socio-economic status. (See Table 33.) Once again, an almost perfect socio-economic progression occurs, with those of high socio-economic status showing a substantially higher level of proficiency than those of low socio-economic status. When one compares the median scores, one can see that there is never an overlap among the upper three socio-economic groups and the lower three. In addition those of *socio-economic group I have a higher median score in grade five than those of socio-economic groups V, VI, and VII are able to achieve seven years later in grade twelve*.

---

[1] Examples of Watts' multiple choice type test together with his conclusions (i.e., that the correct usage of subordinating connectives increases with increasing age) may be found in A. F. Watts, *op. cit.*, pp. 82-84 and pp. 302-305.

## TABLE 32

## TEST SCORES ON THE CORRECT USAGE OF SUBORDINATING CONNECTIVES (Mean)

| Grade | High Group (N = 35) | Low Group (N = 35) | Central Group[1] | Total Group[1] |
|---|---|---|---|---|
| 5 | 41.14 | 15.49 | 30.63 | 29.97 |
| 6 | 43.31 | 20.37 | 34.19 | 33.50 |
| 7 | 43.49 | 22.29 | 37.24 | 35.92 |
| 8 | 44.80 | 24.97 | 38.53 | 37.39 |
| 9 | 45.83 | 27.91 | 40.35 | 39.25 |
| 10 | 45.31 | 30.11 | 40.90 | 39.87 |
| 11 | 45.83 | 31.03 | 41.62 | 40.57 |
| 12 | 46.00 | 31.77 | 42.04 | 41.00 |

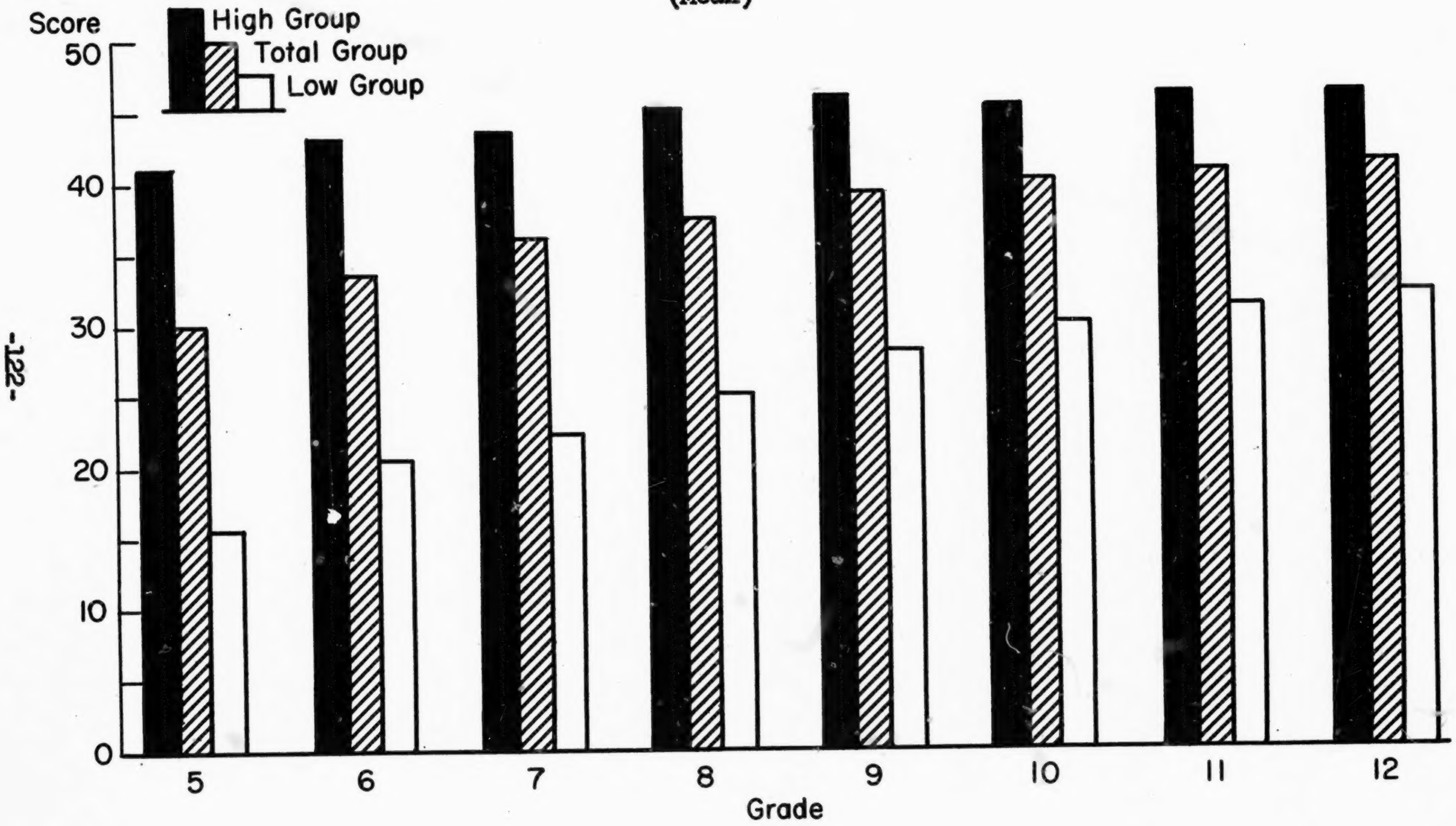
---

[1]

|  | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|
| Central Group N = | 176 | 167 | 160 | 154 | 150 | 147 | 143 | 142 |
| Total Group N = | 246 | 237 | 230 | 224 | 220 | 217 | 213 | 212 |

FIGURE 16

TEST SCORES ON THE CORRECT USAGE OF SUBORDINATING CONNECTIVES
(Mean)



The total and interquartile ranges exhibit several features worthy of note. In Table 33 the *total range* always shows at least one subject from an economically advantaged group exhibiting a low score and at least one subject from an economically disadvantaged group exhibiting a high score. For example, in grade five the total range for socio-economic groups II and V is virtually identical (0 to 47 compared to 0 to 46). On the other hand, the interquartile range (the central fifty per cent of subjects in each group) makes clear that those in socio-economic group II have scores of 34 to 42 whereas those in socio-economic group V have scores of 15 to 33. In other words, when we compare the central fifty per cent of the subjects, we find *the worst subject in socio-economic group II scoring higher than the best subject in socio-economic group V*. Thus the interquartile range points up the true socio-economic disparity between the two groups and is more useful than the total range.[1]

In conclusion, the ability to use subordinating connectives with precision and appropriateness is one of the most crucial aspects of language measured in this research. Seldom in this study is the disparity between the High and Low groups or between the upper and lower socio-economic groups so clearly defined. As the reader has seen, those rated high in language ability (the High group) and those of high socio-economic status (socio-economic group I) are able to use subordinating connectives more proficiently in *grade five* than those rated low in language proficiency (the Low group) or those of low socio-economic status are capable of in *grade twelve*. In itself this disparity of *seven full years* seems remarkable. But it is all the more remarkable when one considers that subordinating connectives are widely used in newspapers, magazines, and even more so in literature. Words such as *because*, *although*, *therefore*, and *however* are the *key words* by which an author changes tone or qualifies his statements; and if one is unable to comprehend such words, it seems likely that little will be gained from what is read.

This seems to be one of the important distinctions between the elaborated language code of the advantaged social classes and the restricted language code of the disadvantaged social classes.

---

[1] The comparison of socio-economic groups II and V at grade five was merely used as an illustration. It can be seen in Table 33 that the socio-economic disparity pointed up by the interquartile range is found throughout the data.

## TABLE 33

## ABILITY TO USE SUBORDINATING CONNECTIVES BY SOCIO-ECONOMIC STATUS

### Median[1]

| Socio-Econ. Status | Grade | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| I | 42 | 43 | 45 | 45 | 46 | 46 | 46 | 46 |
| II | 37 | 41 | 42 | 43 | 44 | 44 | 44 | 45 |
| III | 38 | 40 | 42 | 43 | 44 | 45 | 44 | 46 |
| IV | 33 | 39 | 40 | 41 | 44 | 43 | 43 | 43 |
| V | 28 | 32 | 36 | 37 | 40 | 41 | 41 | 41 |
| VI | 22 | 25 | 32 | 35 | 38 | 38 | 38 | 39 |
| VII | 22 | 29 | 34 | 36 | 37 | 36 | 40 | 38 |

### Interquartile Range

| Socio-Econ. Status | Grade | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| I | 37-43 | 41-45 | 42-46 | 42-47 | 43-47 | 43-47 | 43-48 | 43-48 |
| II | 34-42 | 36-44 | 35-44 | 39-45 | 39-46 | 41-46 | 40-46 | 42-47 |
| III | 32-42 | 36-45 | 37-44 | 40-46 | 41-46 | 42-46 | 42-47 | 43-47 |
| IV | 21-39 | 32-42 | 33-43 | 37-44 | 39-45 | 38-45 | 37-44 | 40-46 |
| V | 15-33 | 19-39 | 26-39 | 31-41 | 32-44 | 33-43 | 36-44 | 35-43 |
| VI | 14-31 | 17-36 | 23-39 | 27-39 | 33-41 | 33-41 | 34-42 | 34-42 |
| VII | 17-32 | 21-36 | 29-38 | 31-38 | 33-40 | 32-42 | 35-42 | 35-41 |

### Total Range

| Socio-Econ. Status | Grade | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| I | 30-47 | 34-49 | 34-47 | 40-49 | 38-49 | 39-49 | 41-49 | 41-48 |
| II | 0-47 | 0-48 | 0-48 | 0-49 | 0-49 | 10-48 | 12-49 | 14-49 |
| III | 11-48 | 11-49 | 26-48 | 31-49 | 30-49 | 36-50 | 38-50 | 36-48 |
| IV | 13-45 | 14-45 | 29-46 | 26-47 | 34-48 | 34-47 | 32-47 | 32-48 |
| V | 0-46 | 0-47 | 0-48 | 0-47 | 6-48 | 10-48 | 4-49 | 8-50 |
| VI | 0-41 | 0-42 | 0-46 | 0-46 | 0-46 | 7-47 | 0-47 | 7-48 |
| VII | 0-39 | 0-43 | 13-45 | 20-42 | 20-47 | 28-45 | 27-45 | 27-47 |

---

[1] I = 24-27; II = 34-42; III = 30-39; IV = 21-24; V = 43-50; VI = 41-45; and VII = 17-19.

Bernstein has discussed this in a number of articles.[1]

Teachers' Ratings

As the investigator indicated previously, teachers' ratings of the subjects' oral language proficiency were accumulated annually for each subject in the research. A thirteen-year cumulative average of these ratings (kindergarten through grade twelve) provided the basis on which the High and Low groups were selected; those who did not fall into either the High or Low group were placed in the Central group.[2]

For each of the years presented (grades three, six, nine, and twelve) the teachers' ratings show a high degree of consistency. (See Table 34 and Figure 17.) In fact when one examines Figure 17, it is difficult visually to perceive a change in any particular group's rating at grade three as compared to grade twelve. Naturally, this high degree of consistency is precisely what one would expect and provides ample evidence that teachers' ratings of the subjects' language proficiency are a sound basis for selecting the subgroups studied in this research.

Teachers' ratings may also be examined from the standpoint of socio-economic status. When this is done, we see once again a clear socio-economic progression: those of high socio-economic status receive the highest ratings; those of low socio-economic

---

[1] Basil Bernstein, "Social Class and Linguistic Development: A Theory of Social Learning," Education, Economy, and Society, A Reader in the Sociology of Education, ed. by A. H. Halsey, Jean Floud, and C. Arnold Anderson (New York: Macmillan, 1961), pp. 288-314.

"Some Sociological Determinants of Perception," British Journal of Sociology IX (London: Routledge and Kegan Paul, Ltd., 1958), pp. 159-174.

"Language and Social Class," British Journal of Sociology XI (London: Routledge and Kegan Paul, Ltd., 1960), pp. 271-276.

[2] The mean average for each group is the average of ratings which were first individually averaged for each subject. Thus the average at grade three is the average of individual cumulative averages for grades kindergarten, one, two, and three; the same is true of successive averages shown. In grade six, for example, the mean average shown is the average of individual cumulative averages for kindergarten through grade six. For a more complete discussion of the rating scale, see the section The Data Collected under the heading "Teachers' Ratings"; a sample of the teachers' rating scale may be found in Appendix II.

## TABLE 34

## TEACHERS' RATINGS OF THE SUBJECTS' LANGUAGE ABILITY

Average Teachers' Ratings[1]
(Mean)

| Grade | High Group (N = 35) | Low Group (N = 35) | Central Group[2] | Total Group[2] |
|---|---|---|---|---|
| 3 | 4.12 | 2.33 | 3.33 | 3.30 |
| 6 | 4.15 | 2.30 | 3.31 | 3.29 |
| 9 | 4.09 | 2.33 | 3.23 | 3.22 |
| 12 | 4.02 | 2.31 | 3.17 | 3.17 |

---

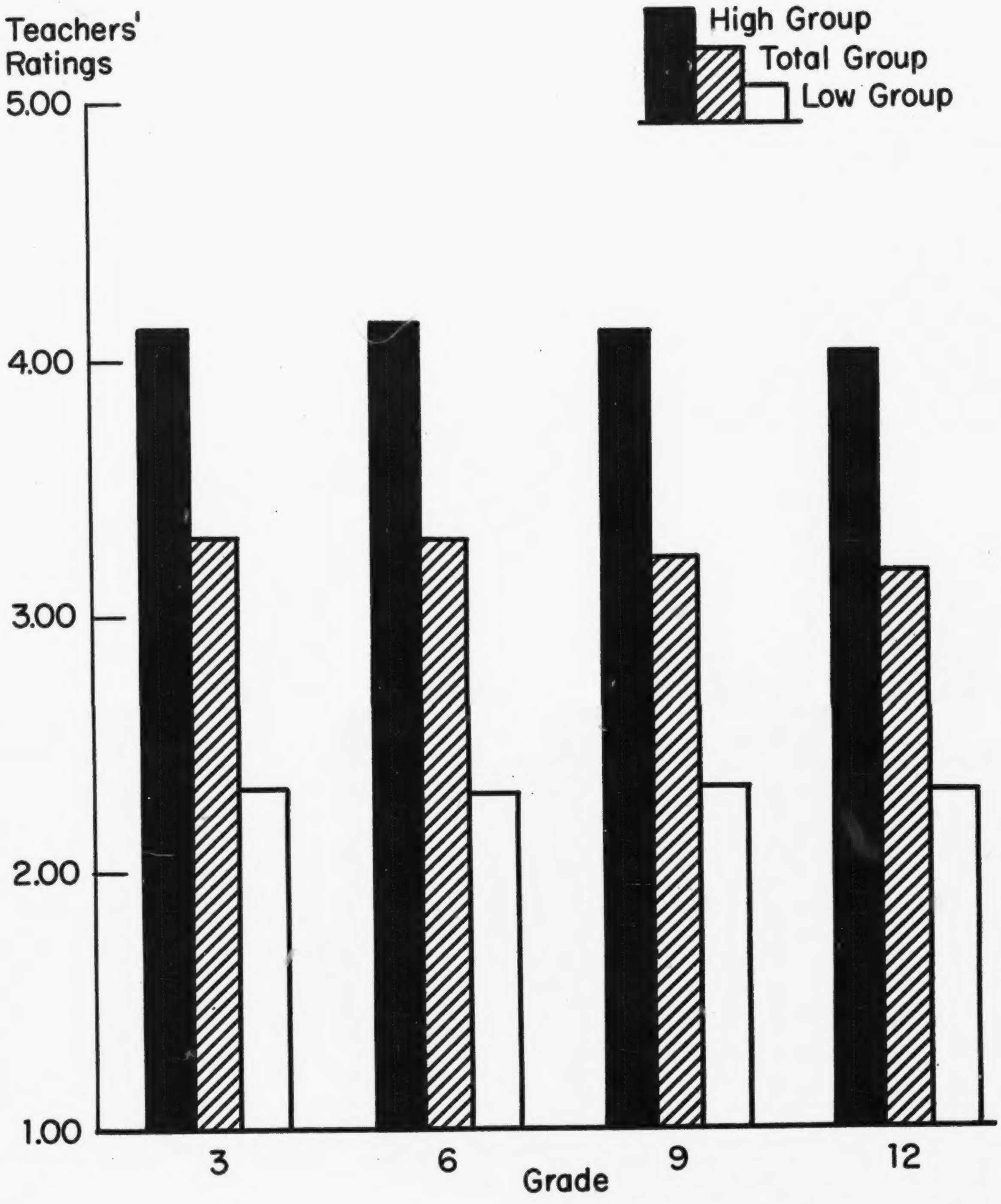
[1] Each rating shown is a cumulative average; i.e., at grade three, it is the individually averaged mean of grades kindergarten, one, two, and three; at grade six, it is an average of all seven years (kindergarten through grade six), etc.

[2]

| | 3 | 6 | 9 | 12 |
|---|---|---|---|---|
| Central Group N = | 193 | 167 | 151 | 145 |
| Total Group N = | 263 | 237 | 221 | 215 |

FIGURE 17

TEACHERS' RATINGS OF THE SUBJECTS' LANGUAGE ABILITY
(Mean)



status receive the lowest ratings. (See Table 35.) Again, there is no overlapping. In all cases, those in the upper three socio-economic groups receive higher ratings than do those in the lower three socio-economic groups. Thus, from the data presented, it can be seen that teachers' ratings not only provide a basis of selecting those high and low in language proficiency but also reflect the same socio-economic progression found throughout the research.

## TABLE 35

## TEACHERS' RATINGS BY SOCIO-ECONOMIC STATUS

| Socio-Econ. Status | Grade[1] 3 | 6 | 9 | 12 |
|---|---|---|---|---|
| I | 3.72 | 3.77 | 3.75 | 3.70 |
| II | 3.44 | 3.49 | 3.40 | 3.34 |
| III | 3.53 | 3.54 | 3.48 | 3.45 |
| IV | 3.44 | 3.44 | 3.30 | 3.22 |
| V | 3.06 | 3.01 | 2.99 | 2.97 |
| VI | 3.05 | 2.95 | 2.89 | 2.82 |
| VII | 2.88 | 2.98 | 2.95 | 2.92 |

---

[1] From grade three to grade twelve, the N's range as follows: I = 30 to 25; II = 45 to 34; III = 44 to 31; IV = 24 to 21; V = 53 to 44; VI = 46 to 42; VII = 21 to 18.

# PART VII: INTERRELATIONS FOUND IN THE RESEARCH

## A General Statement on Interrelations

For purposes of this research the term interrelation has been defined as a close degree of relationship between two or more variables. In some cases the relationship may appear to be causal. For example, low socio-economic status appears to *result* in lack of proficiency in writing; i.e., one appears to *cause* the other. In other cases two or more variables may have a high degree of *association*--a degree of association which proves to be a valuable finding of the research--and yet not be causally related. For example, a high average words per unit in oral language is typically associated with a high average words per unit in written language; and yet it would not appear sound to state that one *causes* the other. Even when there appears to be a causal relationship as in the case of socio-economic status, *this does not imply that the causality is right*. In other words the term "low socio-economic status" carries the implication of uneducated parents, a lack of books in the home, a lack of intellectual stimulation, language used primarily for concrete immediate purposes, schools below national standards, etc. Each of these is obviously subject to change, not only by advancements in our social and economic systems but also through the efforts of teachers working closely with such pupils in the schools.

To a large extent, the fact that the various findings of the research are interrelated has already been indicated by the data presented in previous sections of this monograph. This, it can be seen, is purely a matter of deductive reasoning. A mass of longitudinal data has been analyzed for a thirteen-year period; and *as each successive piece of data has been examined, the conclusions drawn have been virtually identical*:

. . . those rated high in language proficiency (the High group) achieve the highest scores.

. . . those in the Central and Total groups achieve the middle or average scores.

. . . those rated low in language proficiency (the Low group) achieve the lowest scores.

. . . those of high socio-economic status achieve higher scores than do those of low socio-economic status.

In other words, there seems no doubt that the various aspects of language are interrelated, for if this were not the case, the findings of the research would have been radically different.[1] In addition, the fact that teachers' ratings are essentially the teachers' judgments about the subjects' oral language is yet a further proof of the existing interrelationship; i.e., those high, low, or central in oral language rating are consistently high, low, or central on all other measures.

## Types of Interrelations Studied

In previous monographs by the investigator, many interrelations have been charted and analyzed. These included reading achievement related to teachers' ratings, teachers' ratings related to tests of subordinating connectives, listening related to scores on written compositions, etc.[2] In addition, an analysis of variance on the oral and written language of the High, Low, and Random groups points up the disparity among the groups as well as the very positive interrelation between those two aspects of language.[3] And still further, a special study on the control of standard English usage and grammar points up the fact that oral language ratings are closely associated with the ability to use conventional English.[1] For the present monograph, however, statistical analyses of interrelations will be limited to relatively few measures.[2] These will be divided into two categories, the first dealing with three illustrative examples of interrelations and the second dealing with findings of a personality inventory administered to the subjects in grade eleven.

---

[1] At the risk of laboring the point, the investigator would like to point out that if the language arts were not interrelated, each group would presumably have an equal probability of achieving the highest score on any given measure. In other words a lack of interrelationship would lead one to expect (for example) the High group to achieve the best scores on written language while doing poorly on tests of subordinating connectives; or perhaps the Low group would do poorly on length of oral communication unit while simultaneously reading at a higher level than the High group. Obviously, nothing even vaguely similar to such results has been found.

[2] The publication most readily available is Walter Loban, Language Ability: Grades Seven, Eight, and Nine (Washington, D.C.: Superintendent of Documents, U.S. Government Printing Office, 1966). Interrelations may be found on pp. 80-87.

[3] This particular study will be published by the University of Kansas Press. The study used an N of 25 for each group. Subsequently, it was decided to raise the N in each case to 35, and for this reason the findings have not been reproduced in the present monograph. It should be noted, however, that even with a lower N of 25, all findings were significant at the .001 level or better.

## Three Examples of Interrelations

As an illustration of the types of interrelations found in the research, three have been selected as examples. These consist of (1) teachers' ratings compared to the average number of words per oral communication unit, (2) teachers' ratings compared to socio-economic status, and (3) socio-economic status compared to scores on written compositions. Each of these will now be discussed in turn.

### Teachers' Ratings Compared to Average Number of Words per Oral Communication Unit

As the investigator indicated previously, a teacher's rating is the individual teacher's judgment about the subject's proficiency with oral language. For the High and Low groups, a thirteen-year cumulative average of teachers' ratings was compared to their eleventh grade average number of words per oral communication unit.[3]

---

[1] The groups studied were kept separate on an ethnic basis in order to shed light on problems of social class dialect; i.e., the Negro dialect opposed to the prestige dialect (Caucasian). However, for all groups studied the basis of selection was the ratings of the subjects' oral language proficiency. See Walter Loban, Problems in Oral English (Champaign, Illinois: National Council of Teachers of English, 1966). An updated version of the NCTE monograph, carrying the analysis through grade twelve, is included as Part IX of the present monograph.

[2] As the investigator indicated previously, the accumulated data are still in the process of being coded and card-punched.

[3] The statistical analyses for both this section and the following section dealing with the personality inventory were done by Dr. John J. Maykovich, Director of Graduate Programs in Mathematics at College of the Holy Names in Oakland, California. Grade eleven was selected as the basis of comparison for most interrelations analyzed since this was the year in which the personality inventory was administered.

The statistical analysis indicates that those rated high in oral language proficiency (the High group) use a significantly higher average number of words per oral communication unit than do those rated low in oral language proficiency (the Low group). The differences between the two groups were significant at the .00000+ level with a chi-square of 20.00.[1] This, it should be noted, is a rather amazing level of significance, indicating that there is less than one chance in a hundred thousand that the results could be due to chance.[2]

### Teachers' Ratings Compared to Socio-Economic Status

For purposes of this comparison, subjects in socio-economic groups I and II were considered high; those in III, IV, and V were considered intermediate; and those in VI and VII were considered low.

Subjects of high socio-economic status (I and II) were given overwhelmingly higher ratings by teachers than were subjects of intermediate socio-economic status (III, IV, and V) and subjects of low socio-economic status (VI and VII). The precise levels of significance are as follows:

> . . . the high socio-economic group received higher teachers' ratings than the intermediate socio-economic group at the .02 level of significance (chi-square 8.00; two degrees of freedom).

> . . . the high socio-economic group received higher teachers' ratings than the low socio-economic group at the .00000+

---

[1] For all interrelations, the Kolmogorov-Smirnov Test was used to determine the level of confidence at which it was advisable to reject the null hypothesis of no difference. This test is more powerful in all cases than the chi-square test; wherever it is not sharp the value yielded is conservative. It strictly tests one distribution against another without making any assumptions of population normality or homogeneity of variance as are required by the t-test. Compared with the t-test, the Kolmogorov-Smirnov Test has approximately 96 per cent power-efficiency; with large samples this value decreases slightly. See Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences (New York: McGraw-Hill, 1956).

[2] Actually, the level of significance may be even higher than the investigator has indicated. A level of .00000+ means that the significance is so high that it exceeds the maximum levels in published tables.

level of significance with a chi-square of 36.00. Again, this is an amazing significance level, indicating that there is less than one chance in a hundred thousand that the results could be due to chance.

. . . the intermediate socio-economic group received higher teachers' ratings than the low socio-economic group at the .05 level of significance with a chi-square of 6.75.

Thus, on the question of teachers' ratings, each socio-economic grouping shows significant differences when compared to any other socio-economic grouping; as one might expect, the highest levels of significance were obtained when those of high socio-economic status were compared to those of low socio-economic status.

### Socio-Economic Status Compared to Scores on Written Compositions

For purposes of this comparison the same socio-economic groupings as in the above analysis have been used; i.e., socio-economic groups I and II are considered high; III, IV, and V are considered intermediate; and VI and VII are considered low. Scores on written compositions were also broken down into high, intermediate, and low, with 1.00 to 2.10 considered high; 2.11 to 3.00 considered intermediate; and 3.01 to 4.00 considered low.[1] The precise levels of significance are as follows:

. . . those of high socio-economic status obtained higher scores on their written compositions than those of intermediate socio-economic status at the .005 level of significance with a chi-square of 10.60.

. . . those of high socio-economic status obtained higher scores on their written compositions than those of low socio-economic status at the .00000+ level of significance with a chi-square of 50.00.

. . . those of intermediate socio-economic status obtained higher scores on their written compositions than those of low socio-economic status at the .00000+ level of significance with a chi-square of 30.00.

---

[1] The reader will recall that the Roman numerals used to rate compositions were converted to Arabic numbers; thus I (or 1) equals Superior, II (or 2) equals High Average, etc. The compositions used in the present analysis are an average of the subjects' tenth, eleventh, and twelfth grade scores.

Thus once again highly significant differences have been found between each socio-economic grouping compared to any other socio-economic grouping. In addition, it should be emphasized that both the high and intermediate socio-economic groupings show a degree of writing proficiency far superior to that of the low socio-economic grouping (significant at the .00000+ level). From this it can be seen that this particular facet of language ability (writing) is one that needs major concentration in the schools if the low socio-economic subjects are even to approach the level of proficiency obtained by those of higher socio-economic status.

## Interrelations Between Language Proficiency and Attitudinal Orientations

In grade eleven a personality inventory--*Attitudes toward the Study of School Subjects*--was administered to each subject in the research.[1] The inventory contains a total of 72 items on which the subject expresses his agreement or disagreement.[2] These 72 items are then categorized into the following six scales of attitudinal orientation:[3]

prudent-theoretic
prudent-immediate
prudent-aesthetic
theoretic-immediate
theoretic-aesthetic
immediate-aesthetic

These terms, as used in the inventory, have been defined by Edwards as follows:

Prudent: The prudent individual reflects upon alternative possibilities of social action and is concerned with the long-run consequences of acts. He will renounce opportunities for the immediate gratification of proximate ends where this may conflict with more remote or general values. He seeks to rationalize his social environment by widening his scope of cognition, rather than by narrowing or compartmentalizing it, and thus is motivated toward the behavioral sciences.

---

[1] The inventory was designed by T. Bentley Edwards of the University of California at Berkeley. For a more complete description of the inventory as well as for Edwards' findings, see T. Bentley Edwards and Alan B. Wilson, "Attitudes toward the Study of School Subjects," in *Educational Theory* VIII:4 (1958), pp. 275-284; and "The Development Scales of Attitudinal Dimensions," in *The Journal of Experimental Education* XXVIII:1 (1959), pp. 3-36.

[2] For each question the inventory uses a six-point scale ranging from strongly agree to strongly disagree.

[3] Each scale is composed of twelve items; thus each of the six scales makes use of an equal number of the 72 items in the inventory.

Theoretic: The theoretic individual, with a deliberative analytic orientation toward the nonsocial environment, is characterized by interest in the natural sciences and in mathematics.

Aesthetic: The aesthetic individual exhibits an immediate responsiveness to the nonsocial environment. (The dictionary generally defines aesthetic as appreciation or responsiveness to the beautiful in art or nature.)

Immediate: The immediate individual assumes the proximate goals emerging from the social environment. He is responsive to the sanctions of others and seeks their esteem. His means toward success may be manipulative or vicarious fantasy. The concurrence of the nondeliberative mode with orientation toward the social environment is designated as immediate.

As one facet of the present research, the intention was to determine how closely the six scales of attitudinal orientations were associated with (1) scores on written compositions, (2) average number of words per oral communication unit, and (3) teachers' ratings of the subjects' oral language proficiency.[1]

## Attitudinal Orientations Compared to Scores on Written Compositions

For purposes of this comparison, writing scores of 1.00 to 2.10 were classified as high, scores of 2.11 to 3.00 were classified as intermediate, and scores of 3.01 to 4.00 were classified as low.[2]

On the prudent-theoretic scale those who received high scores on written compositions were significantly more prudent than those who received low scores. (Significant at the .01 level; chi-square of 9.29.) Those with written composition scores in the intermediate range were also in an intermediate position on the prudent-theoretic scale.

---

[1] Naturally, the analysis could be extended, examining other measures of language proficiency as they relate to the personality inventory.

[2] For each subject the scores on his written compositions in grades ten, eleven, and twelve were first averaged before being compared to the attitudinal orientation scale.

On the *prudent-immediate* scale subjects with high scores on written compositions were again significantly more prudent than subjects with low scores. (Significant at the .02 level; chi-square of 8.20.) As expected, subjects with intermediate scores were in an intermediate position on the prudent-immediate scale.

On the *prudent-aesthetic* scale those with high scores on their written compositions were once again significantly more prudent than those with low scores. (The significance level reached .00000+, chi-square of 22.30.) Those with intermediate scores were once more in the intermediate range.

On the *theoretic-aesthetic* scale those with high scores on written compositions were significantly more theoretic than those with low scores. (Significant at the .005 level; chi-square of 11.00.) This, of course, should not be construed as a contradiction of the findings on the prudent-theoretic scale. Each scale is composed of *different questions* on which the subject makes *choices* as to his degree of agreement or disagreement. Thus on *one scale* he may appear prudent whereas on a *different scale* he may appear theoretic.[1]

On the *theoretic-immediate* scale and the *aesthetic-immediate* scale no significant differences were observed when these scales were related to the subjects' writing scores.

## *Attitudinal Orientations Compared to Average Words per Oral Communication Unit*

For purposes of this comparison, a high average number of words per unit was taken to be 13.00 or higher; an intermediate average words per unit was taken to be 11.00 to 12.99; and a low average words per unit was taken to be 6.00 to 10.99.[2]

---

[1] As an analogy, one can visualize what might be thought of as a prudent person (one concerned with security, substantial income, etc.). Given the choice, this person may prefer to be a business executive rather than a mathematician. But forced to choose between other alternatives, he may prefer to be a mathematician rather than an artist.

[2] The comparison was made on the eleventh grade oral average words per unit using a total of 86 subjects.

On the prudent-theoretical scale, subjects with the highest average number of words per oral communication unit were significantly more prudent than were those intermediate or low on average words per unit. Differences between the high and intermediate were significant at the .015 level with a chi-square of 8.73. Differences between the high and low were significant at the .00000+ level with a chi-square of 20.00.

On the other scales of attitudinal orientation, no significant differences were observed relating to average number of words per oral communication unit.

### Attitudinal Orientations Compared to Teachers' Ratings

For purposes of this comparison, thirteen-year cumulative averages of teachers' ratings for the High, Low, and Central groups of subjects were related to the six scales of attitudinal orientations.

Subjects who received high teachers' ratings (the High group) were found to be significantly more prudent than other subjects in the research (the Central and Low groups). This was true on the prudent-theoretic scale, the prudent-immediate scale, and the prudent-aesthetic scale. Among all groups, levels of significance were generally at the .01 level although levels of significance at times reached the .0003 level. (This was between the High and Low groups on the prudent-aesthetic scale.)

On the theoretic-immediate scale and the aesthetic-immediate scale, no significant differences were found. However, on the theoretic-aesthetic scale, subjects with high teachers' ratings were found to be significantly more theoretic. (Significant at the .03 level; chi-square of 7.00.)[1]

## Summary on Interrelations

To summarize briefly, it can be said that the various aspects of language proficiency (speaking, reading, writing, and listening) are definitely interrelated, not only to each other but also to the socio-economic status of the subjects studied. This would seem apparent simply as a matter of logical deduction: on all measures of language proficiency the High, Central (or Total), and Low groups of subjects form an obvious progression of relative ability. This is also apparent when examining the same data from the standpoint of socio-economic status: those of high socio-economic status are obviously more proficient in language than are those of low socio-economic status.

---

[1] See the earlier discussion on how a subject could be rated prudent on one scale and theoretic on a different scale.

Despite the overwhelming evidence indicating that the various aspects of language are interrelated, logical deduction must be substantiated by statistical analysis. When statistical techniques are applied to the data, the levels of significance not only reach the standard .05 or .01 levels but often are so highly significant that the actual level defies measurement; i.e., the level of significance sometimes reaches .00000+ which goes beyond the level of published tables measuring significance.

From the standpoint of a personality inventory administered in grade eleven, the data also show significant interrelations. Subjects who obtained high teachers' ratings, high writing scores, and high average number of words per oral communication unit were found significantly more prudent than other subjects in the research. This was true in every case examined and tends to point toward the possibility that in our present society, those with strong prudent orientations are also those who show the most proficiency in language.

# PART VIII: A SPECIAL STUDY ON THE ELABORATION OF LANGUAGE

## The Definition of Elaboration

For purposes of this chapter, the elaboration of language has been defined as the use of various strategies of syntax through which the individual communication unit is expanded beyond a simple subject and predicate. Thus a study of elaboration deals not only with modification through adjectives and adverbs but also with prepositional phrases, infinitives, appositives, participles, and other elaborated strategies of structure. Expansion through compounding and modification through adverbs and adjectives prove to be less indicative of language skill than phrasal or clausal elaboration. For that reason counts of simple modification and compounding will be omitted in this section.

## The Subgroups

The elaboration study makes use of the same High and Low groups (N = 35) that have been used throughout the research. Because of the time-consuming nature of the analysis, the Random group (N = 35) has been used in lieu of the Total group. In all cases data on both the oral and written language of the subjects will be presented for grades six, eight, ten, and twelve.

## The Language Sample

For each member of the High, Low, and Random groups a total of 30 communication units per subject (per grade) were used in this special study of elaboration. These 30 units were carefully chosen to ensure complete comparability; i.e., in all cases the units were selected from identical parts of each subject's transcript.[1] Once the selection of units was completed, each unit was then typed on a separate sheet of paper (termed an elaboration sheet) and thoroughly analyzed in accordance with a clearly defined series of instructions.[1]

---

[1] In the case of written language, the first 30 communication units in the subject's composition were used. In some cases a given composition may have been less than 30 units. However, this had no effect on the presentation since each computation was done on an individual basis before group means were computed.

## Findings on Elaboration

The data presented in the elaboration study consist of the following:

. . . structural patterns

. . . proportions of dependent clauses

. . . functions of noun clauses

. . . types of adverb clauses

. . . average words per communication unit (in those communication units selected for the special study of elaboration)

. . . average number of clauses per communication unit

. . . average number of words per clause.[2]

The reader should note that on the first four measures the subjects will be treated on a percentage basis with each group's total in any given grade equaling 100.00 per cent. The purpose in doing this is to first determine if the High, Low, and Random groups use different proportions of the various structural patterns, noun clauses, adverb clauses, and adjective clauses. Following this, the analysis will then focus on the various averages indicated above (the last three measures) thus taking into account what is accomplished within the communication unit in terms of elaboration.

---

[1] This preliminary work was undoubtedly one of the most time-consuming features ever encountered in the research. The analysis of a single communication unit often filled an entire sheet because of the need to examine clauses, clauses within clauses, two clauses within a third clause, etc. Each clause had to be identified as to type and function, counted, the pattern of the unit specified, etc., before even the most simple type of tally work could begin.

[2] The findings on elaboration are naturally incomplete in the sense that a great deal more may be learned now that the massive amount of preliminary work has been completed on grades six, eight, ten, and twelve. In addition, the investigator intends to apply the same methods of analysis to earlier years in the research to obtain a complete, longitudinal study of elaboration.

## Structural Patterns

In this elaboration study the first step was to examine the subject's oral and written language to determine their relative abilities to use the ten basic structural patterns of the English language. Experience in the research has shown that all communication units will fall into one of the following ten patterns:

| Pattern | Symbol | Examples |
|---|---|---|
| one | 1 2 or 1 ②<br>(Subject-Verb) | Mary eats. (or) Mary is home. |
| two | 1 2 4<br>(Subject-Verb-Direct Object) | Mary eats strawberries. |
| three | 1 ② 5<br>(Subject-Linking Verb-Complement) | Strawberries are berries.<br>Strawberries are good. |
| four | 1 2 3 4<br>(Subject-Verb-Indirect Object-Direct Object) | Mary threw the dog some biscuits. |
| five | 1 2 4 6<br>(Subject-Verb-Direct Object-Outer Complement) | They elected Mary president.<br>They thought Susie conceited. |
| six | (1)② 1<br>(Expletive-Linking Verb-Subject) | Here is Mary.<br>There are four houses on Lime Street. |
| seven | Questions | How does he do it? Is he here? |
| eight | Passive forms | Strawberries were eaten by Mary. |
| nine | Requests, commands | Go home. (or) Let us go home. |
| (ten) | Partials | Any incomplete unit. (This is not actually a pattern like the preceding nine patterns. |

The findings on structural patterns indicate that for all groups studied (High, Low, and Random) the great bulk of usage, both oral and written, is centered in the three most common patterns of the English language; i.e., (1) subject-verb, (2) subject-verb-direct object, and (3) subject-linking verb-complement. (See Table 36 for oral language and Table 37 for written language.) In these first three patterns there are certainly differences among the groups (differing percentages); but at the same time there are no clear-cut trends except for a slight tendency among all groups to increase pattern 3 (subject-linking verb-complement) in the later years of schooling.

In looking at the other patterns (those which might be termed the less common structures), one can see that the lack of discernible trends is again quite evident. For example, the High group uses a greater percentage of passive constructions than the Low group, but on occasion the Random group surpasses the High group (writing grades ten and twelve). Or in looking at partials one can see that the Low group generally uses a greater proportion of these types of construction than either of the other two groups studied, and yet in grade twelve (oral) the Random group has a higher percentage of partials than the Low group.[1] The remaining patterns show this same lack of clearly defined trends.[2] Thus we have our first indication that underlying structural patterns will not provide evidence on the relative abilities of the three groups to use elaborated language; instead the evidence will evolve from what is accomplished within the pattern in terms of expanding, broadening, and developing the individual communication unit.

---

[1] In previous publications by the investigator, the data indicated that the Low group had a substantially higher percentage of partials than the High group. This difference in the two pieces of data results from the fact that the present elaboration units have been selected from sections of the individual transcripts where a clear flow of language was already under way whereas the earlier data were calculated on the subject's entire transcript. In other words, the intention of the elaboration study was to avoid introductory type questions and answers (between the interviewer and the subject) and thus ensure a good, representative sample of each subject's language at a point where it was flowing smoothly.

[2] If trends were actually present in the data, one would expect them to be much more clearly defined; i.e., one would expect the percentages of some structural patterns to show steady declines while others showed steady increases.

## TABLE 36

## STRUCTURAL PATTERNS USED IN ELABORATION UNITS

Oral Language
High, Low, and Random Group of Subjects
(In per cent)

| | High Group (N=35) Grade | | | | Low Group (N=35) Grade | | | | Random Group (N=35) Grade | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pattern | 6th | 8th | 10th | 12th | 6th | 8th | 10th | 12th | 6th | 8th | 10th | 12th |
| 1 2 or<br>1 ② | 24.86 | 25.30 | 22.38 | 18.90 | 24.24 | 25.12 | 27.30 | 28.67 | 23.08 | 26.80 | 21.98 | 22.80 |
| 1 2 4 | 41.73 | 40.37 | 41.42 | 44.34 | 48.56 | 43.09 | 43.82 | 39.20 | 45.15 | 41.73 | 43.99 | 39.94 |
| 1 ② 5 | 22.48 | 24.61 | 25.93 | 26.51 | 14.80 | 17.92 | 18.32 | 22.96 | 18.50 | 20.27 | 23.05 | 26.68 |
| 1 2 3 4 | 2.03 | 1.03 | 1.44 | 0.27 | 2.51 | 2.77 | 1.54 | 1.20 | 2.07 | 2.07 | 1.61 | 1.12 |
| 1 2 4 6 | 0.45 | 0.71 | 0.10 | 0.56 | 0.18 | 0.38 | 0.28 | 0.28 | 0.35 | 0.10 | 0.27 | 0.28 |
| (1)② 1 | 2.53 | 3.26 | 2.95 | 2.54 | 4.27 | 5.14 | 4.42 | 1.34 | 5.45 | 4.03 | 3.35 | 2.61 |
| Questions | 0.55 | 0.56 | 0.61 | 0.95 | 0.36 | 0.38 | 0.37 | 0.92 | 0.19 | 0.46 | 0.55 | 0.66 |
| Passives | 1.93 | 2.74 | 2.68 | 2.85 | 1.09 | 1.37 | 0.35 | 2.10 | 2.83 | 2.37 | 2.21 | 2.25 |
| Requests-Commands | 0.46 | 0.18 | 0.44 | 0.66 | 0.94 | 1.28 | 1.23 | 0.66 | 1.02 | 0.56 | 0.81 | 0.64 |
| Partials | 2.98 | 1.24 | 2.05 | 2.42 | 3.05 | 2.55 | 2.37 | 2.67 | 1.36 | 1.61 | 2.18 | 3.02 |
| Total | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

## TABLE 37

## STRUCTURAL PATTERNS USED IN ELABORATION UNITS

### Written Language

High, Low, and Random Group of Subjects
(In per cent)

| | High Group (N=35) Grade | | | | Low Group (N=35) Grade | | | | Random Group (N=35) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pattern | 6th | 8th | 10th | 12th | 6th | 8th | 10th | 12th | 6th | 8th | 10th | 12th |
| 1 2 or<br>1 ② | 24.91 | 33.74 | 18.01 | 17.93 | 28.18 | 31.82 | 19.76 | 24.10 | 31.46 | 33.04 | 21.02 | 20.45 |
| 1 2 4 | 50.66 | 35.99 | 39.92 | 42.57 | 40.94 | 29.82 | 46.76 | 43.39 | 46.01 | 34.15 | 40.66 | 41.68 |
| 1 ② 5 | 16.40 | 20.60 | 27.21 | 24.14 | 14.49 | 28.10 | 19.76 | 18.69 | 12.50 | 22.09 | 22.52 | 20.44 |
| 1 2 3 4 | 2.47 | 1.00 | 1.00 | 0.91 | 0.66 | 1.07 | 1.04 | 0.60 | 1.45 | 0.62 | 0.93 | 1.47 |
| 1 2 4 6 | 0.24 | 0.41 | 0.58 | 1.67 | 0.00 | 0.00 | 0.24 | 0.68 | 0.19 | 0.00 | 0.29 | 0.68 |
| (1) ② 1 | 2.62 | 1.52 | 1.81 | 3.11 | 11.08 | 3.60 | 4.30 | 1.86 | 2.88 | 3.23 | 2.59 | 3.43 |
| Questions | 0.00 | 2.54 | 4.15 | 3.16 | 0.43 | 0.00 | 0.00 | 1.18 | 1.06 | 1.85 | 2.07 | 2.16 |
| Passives | 1.06 | 2.47 | 4.83 | 3.51 | 0.43 | 0.30 | 3.38 | 3.61 | 0.83 | 1.21 | 7.90 | 6.26 |
| Requests-Commands | 0.54 | 0.67 | 0.96 | 1.00 | 0.00 | 0.17 | 0.11 | 0.49 | 0.28 | 0.14 | 0.18 | 0.67 |
| Partials | 1.10 | 1.06 | 1.53 | 2.00 | 3.79 | 5.12 | 4.65 | 5.40 | 3.34 | 3.67 | 1.84 | 2.76 |
| Total | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

## Proportion of Noun, Adjective, and Adverb Clauses Used by Each Group

The findings on the proportions of noun, adjective, and adverb clauses used by each group indicate once again that no clearly defined trends are found in the data. (See Table 38.) In oral language, the High group uses a greater percentage of adjective clauses than the Low or Random groups. But when looking at the evidence on written language, one sees that the apparent trend is no longer obvious; i.e., both the Low group and the Random group sometimes use a higher percentage of adjective clauses than the High group. This same lack of trend is also found in the proportions of noun clauses and adverb clauses used by each group. Thus, just as in the case of structural patterns, the obvious conclusion is that it is necessary to examine the data on a deeper level in order to measure the subjects' relative abilities to use elaborated language.

## Functions of Noun Clauses

The evidence on functions of noun clauses points up two trends: (1) the limited repertoire of the Low group in written language and (2) the fact that in both oral and written language the great bulk of usage for all groups is centered in the category of direct objects. (See Table 39.) Many students of children's language have noticed that noun clauses used as objects are very common and learned early in life; for example, "I know what you did." Noun clauses used as subjects, complements, appositives, and nominative absolutes are much later developments. It should be stressed again, however, that these are proportional relationships; i.e., each type of noun clause is expressed as a percentage of the group's total noun clauses for the given year. It will be seen later that the High group uses more clauses within a given (equal) sample of language than either the Low or Random group.

Predicate nominatives are the second most widely used type of noun clause construction although in written language the High and Random groups use a far lower percentage of predicate nominatives than the Low group. In fact, in written language the Low group centers virtually all of its usage in only two categories--direct objects and predicate nominatives. Thus a comparison of oral and written language points up a difference among the groups. In oral language each group uses relatively similar proportions of the various kinds of noun clauses whereas in written language the High group and the Random group use a

## TABLE 38

## PROPORTION OF NOUN, ADJECTIVE, AND ADVERB CLAUSES USED BY EACH SUBGROUP

(Mean -- in per cent)

### Oral Language

High Group
(N=35)

| Grade | Noun Clauses | Adjective Clauses | Adverb Clauses | Total Dependent Clauses |
|---|---|---|---|---|
| 6 | 47.38 | 22.53 | 30.09 | 100.00 |
| 8 | 36.52 | 35.30 | 28.18 | 100.00 |
| 10 | 43.35 | 30.20 | 26.45 | 100.00 |
| 12 | 43.34 | 33.05 | 23.61 | 100.00 |

Low Group
(N=35)

| Grade | Noun Clauses | Adjective Clauses | Adverb Clauses | Total Dependent Clauses |
|---|---|---|---|---|
| 6 | 52.06 | 22.36 | 25.58 | 100.00 |
| 8 | 29.79 | 31.05 | 39.16 | 100.00 |
| 10 | 47.74 | 20.43 | 31.83 | 100.00 |
| 12 | 45.24 | 20.74 | 34.02 | 100.00 |

Random Group
(N=35)

| Grade | Noun Clauses | Adjective Clauses | Adverb Clauses | Total Dependent Clauses |
|---|---|---|---|---|
| 6 | 47.06 | 21.10 | 31.84 | 100.00 |
| 8 | 37.14 | 34.24 | 28.62 | 100.00 |
| 10 | 44.54 | 25.50 | 29.96 | 100.00 |
| 12 | 50.27 | 24.69 | 25.04 | 100.00 |

## TABLE 38, Continued

## PROPORTION OF NOUN, ADJECTIVE, AND ADVERB CLAUSES USED BY EACH SUBGROUP
(Mean -- in per cent)

### Written Language

High Group
(N=35)

| Grade | Noun Clauses | Adjective Clauses | Adverb Clauses | Total Dependent Clauses |
|---|---|---|---|---|
| 6 | 34.37 | 15.86 | 49.77 | 100.00 |
| 8 | 37.47 | 26.13 | 36.40 | 100.00 |
| 10 | 34.59 | 30.91 | 34.50 | 100.00 |
| 12 | 33.71 | 31.46 | 34.83 | 100.00 |

Low Group
(N=35)

| Grade | Noun Clauses | Adjective Clauses | Adverb Clauses | Total Dependent Clauses |
|---|---|---|---|---|
| 6 | 39.06 | 35.42 | 25.52 | 100.00 |
| 8 | 31.16 | 23.70 | 45.14 | 100.00 |
| 10 | 32.21 | 27.91 | 39.88 | 100.00 |
| 12 | 29.65 | 37.75 | 32.60 | 100.00 |

Random Group
(N=35)

| Grade | Noun Clauses | Adjective Clauses | Adverb Clauses | Total Dependent Clauses |
|---|---|---|---|---|
| 6 | 44.60 | 16.32 | 39.08 | 100.00 |
| 8 | 37.39 | 21.60 | 41.01 | 100.00 |
| 10 | 31.15 | 34.22 | 34.63 | 100.00 |
| 12 | 29.58 | 33.91 | 36.51 | 100.00 |

TABLE 39

FUNCTIONS OF NOUN CLAUSES
(Mean -- in per cent)

Oral Language

| | High Group (N=35) Grade | | | | Low Group (N=35) Grade | | | | Random Group (N=35) Grade | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Function | 6th | 8th | 10th | 12th | 6th | 8th | 10th | 12th | 6th | 8th | 10th | 12th |
| Direct Obj. | 62.52 | 56.02 | 61.26 | 69.08 | 75.37 | 65.16 | 67.38 | 59.00 | 66.10 | 58.39 | 63.19 | 61.43 |
| Pred. Nom. | 24.74 | 27.78 | 26.50 | 17.86 | 19.16 | 18.31 | 20.81 | 22.20 | 20.83 | 24.79 | 25.62 | 20.29 |
| Obj. of Inf. | 5.60 | 10.29 | 4.07 | 2.15 | 2.91 | 9.86 | 6.39 | 4.13 | 7.56 | 11.01 | 3.45 | 6.02 |
| Obj. of Prep | 5.20 | 4.15 | 5.18 | 3.98 | 1.86 | 6.67 | 3.70 | 7.65 | 3.48 | 4.41 | 5.28 | 5.40 |
| Appositive | 0.71 | 0.00 | 0.24 | 1.89 | 0.00 | 0.00 | 0.00 | 0.51 | 0.00 | 0.00 | 0.41 | 1.23 |
| Subject | 0.41 | 0.00 | 0.92 | 1.54 | 0.29 | 0.00 | 0.49 | 2.51 | 1.08 | 0.00 | 0.00 | 1.99 |
| Obj. of Ger. | 0.41 | 0.00 | 0.00 | 0.48 | 0.00 | 0.00 | 0.74 | 0.51 | 0.00 | 0.00 | 0.41 | 0.22 |
| Other[1] | 0.41 | 1.76 | 1.83 | 3.02 | 0.41 | 0.00 | 0.49 | 3.49 | 0.95 | 1.40 | 1.64 | 3.42 |
| Total | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

---

[1] The category "Other" includes the following types of noun clauses: object of participle, nominative absolute, subsequent appositive, parenthetical, and rhetorical questions.

## TABLE 39, Continued

## FUNCTIONS OF NOUN CLAUSES
(Mean -- in per cent)

Written Language

| | High Group (N=35) Grade | | | | Low Group (N=35) Grade | | | | Random Group (N=35) Grade | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Function | 6th | 8th | 10th | 12th | 6th | 8th | 10th | 12th | 6th | 8th | 10th | 12th |
| Direct Obj. | 85.42 | 70.83 | 71.16 | 59.71 | 70.00 | 74.22 | 55.09 | 61.31 | 80.39 | 74.56 | 59.49 | 63.36 |
| Pred. Nom. | 8.33 | 10.70 | 9.63 | 9.13 | 30.00 | 18.75 | 35.18 | 29.60 | 11.84 | 7.14 | 24.92 | 12.26 |
| Obj. of Inf | 0.00 | 3.63 | 6.22 | 5.83 | 0.00 | 6.25 | 6.38 | 6.80 | 0.00 | 3.21 | 2.97 | 9.67 |
| Obj. of Prep. | 0.00 | 9.03 | 3.03 | 8.95 | 0.00 | 0.00 | 1.43 | 1.89 | 1.75 | 5.93 | 3.01 | 5.68 |
| Appositive | 0.00 | 2.69 | 3.91 | 2.06 | 0.00 | 0.78 | 0.77 | 0.00 | 0.00 | 1.19 | 0.78 | 0.45 |
| Subject | 0.00 | 0.00 | 0.49 | 5.24 | 0.00 | 0.00 | 1.15 | 0.00 | 0.00 | 1.79 | 5.31 | 0.00 |
| Obj. of Ger | 4.17 | 0.00 | 0.53 | 2.52 | 0.00 | 0.00 | 0.00 | 0.00 | 5.26 | 0.00 | 0.39 | 0.89 |
| Other[1] | 2.08 | 3.12 | 5.03 | 6.56 | 0.00 | 0.00 | 0.00 | 0.40 | 0.76 | 6.18 | 3.13 | 7.69 |
| Total | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

---

[1] The category "Other" includes the following types of noun clauses: object of participle, nominative absolute, subsequent appositive, parenthetical, and rhetorical questions.

greater repertoire of noun clauses than the Low group; i.e., higher percentages of objects of gerunds, subjects, appositives, and the less commonly used noun clauses which were not tallied separately but placed in the "Other" column.[1]

## Types of Adverb Clauses

The evidence on the types of adverb clauses used by the High, Low, and Random groups is presented in Table 40. For all groups studied, the findings indicate that the most frequently used adverb clauses are those of time and cause. Once again, these adverbial clauses are learned early in life, for small children use both types although their use of causality is likely to be the form only rather than a statement of precise logical causation. This is the case in both written and oral language although all groups show a tendency to use lower percentages of time clauses in the later years of high school (grade twelve for oral and grades ten and twelve for written).

The evidence on the remaining adverb clauses used by the High, Low, and Random groups (those other than clauses of time and cause), reinforces the findings that differences among the groups are not remarkable. The High group tends to use a higher proportion of clauses of consequence and concession than either the Low or Random group; but even here, it is only a tendency rather than a clearly defined trend. For example, the Low group uses a higher proportion of clauses of consequence than the High group in grade ten oral and in grades six and ten written. The reader can easily locate other examples indicating this same lack of trend in the data.

Actually, this lack of strong, clearly defined trends, not only in the case of adverb clauses but also in the cases of noun clauses and structural patterns which were examined previously, leads to a conclusion which may be summarized very briefly. It allows us to state that within the confines of a percentage comparison, no major differences among the High, Low, and Random groups of subjects have been observed on these first four greater repertoire of noun clauses than the Low group; i.e., higher percentages of objects of gerunds, subjects, appositives, and the less commonly used noun clauses which were not tallied separately but placed in the "Other" column.[1]

---

[1] The reader should note that both the High and the Random groups are different from the Low group. Thus, even in the case of repertoire of noun clauses in written language, we do not find the three groups spread along a continuum of abilities.

## Types of Adverb Clauses

The evidence on the types of adverb clauses used by the High, Low, and Random groups is presented in Table 40. For all groups studied, the findings indicate that the most frequently used adverb clauses are those of time and cause. Once again, these adverbial clauses are learned early in life, for small children use both types although their use of causality is likely to be the form only rather than a statement of precise logical causation. This is the case in both written and oral language although all groups show a tendency to use lower percentages of time clauses in the later years of high school (grade twelve for oral and grades ten and twelve for written).

The evidence on the remaining adverb clauses used by the High, Low, and Random groups (those other than clauses of time and cause), reinforces the findings that differences among the groups are not remarkable. The High group tends to use a higher proportion of clauses of consequence and concession than either the Low or Random group; but even here, it is only a tendency rather than a clearly defined trend. For example, the Low group uses a higher proportion of clauses of consequence than the High group in grade ten oral and in grades six and ten written. The reader can easily locate other examples indicating this same lack of trend in the data.

Actually, this lack of strong, clearly defined trends, not only in the case of adverb clauses but also in the cases of noun clauses and structural patterns which were examined previously, leads to a conclusion which may be summarized very briefly. It allows us to state that within the confines of a percentage comparison, no major differences among the High, Low, and Random groups of subjects have been observed on these first four

---

[1] The reader should note that both the High and the Random groups are different from the Low group. Thus, even in the case of repertoire of noun clauses in written language, we do not find the three groups spread along a continuum of abilities.

## TABLE 40

## TYPES OF ADVERB CLAUSES
(Mean -- in per cent)

| | Oral Language | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | High Group (N=35) | | | | Low Group (N=35) | | | | Random Group (N=35) | | | |
| | Grade | | | | Grade | | | | Grade | | | |
| Type | 6th | 8th | 10th | 12th | 6th | 8th | 10th | 12th | 6th | 8th | 10th | 12th |
| Time | 43.74 | 43.96 | 40.19 | 24.39 | 43.71 | 42.91 | 50.68 | 32.46 | 39.26 | 37.42 | 46.85 | 26.74 |
| Cause | 34.10 | 25.63 | 31.71 | 38.59 | 30.33 | 28.69 | 23.81 | 32.44 | 43.38 | 29.45 | 31.07 | 31.44 |
| Condition | 6.56 | 2.79 | 2.31 | 15.21 | 11.22 | 15.64 | 6.86 | 20.85 | 6.67 | 11.29 | 5.30 | 20.18 |
| Consequence | 6.93 | 14.33 | 7.33 | 5.18 | 3.51 | 0.00 | 7.81 | 0.97 | 3.92 | 7.95 | 3.08 | 2.26 |
| Manner | 6.48 | 2.53 | 0.79 | 6.03 | 0.51 | 2.02 | 3.26 | 3.16 | 0.00 | 4.29 | 4.19 | 1.43 |
| Place | 1.17 | 3.37 | 1.96 | 0.00 | 3.10 | 0.00 | 0.62 | 0.00 | 0.00 | 0.00 | 0.87 | 0.00 |
| Degree | 1.02 | 0.63 | 0.98 | 0.33 | 1.79 | 0.00 | 1.88 | 0.57 | 0.00 | 0.00 | 0.76 | 0.48 |
| Purpose | 0.00 | 3.41 | 4.05 | 2.74 | 5.83 | 8.34 | 2.60 | 3.67 | 6.18 | 9.60 | 5.99 | 8.69 |
| Concession | 0.00 | 2.78 | 6.58 | 4.89 | 0.00 | 1.01 | 0.00 | 4.38 | 0.00 | 0.00 | 0.00 | 4.76 |
| Comparison | 0.00 | 0.57 | 4.10 | 2.64 | 0.00 | 1.39 | 2.48 | 1.50 | 0.59 | 0.00 | 1.89 | 4.02 |
| Total | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

TABLE 40, Continued

TYPES OF ADVERB CLAUSES
(Mean -- in per cent)

Written Language

| Type | High Group (N=35) Grade 6th | 8th | 10th | 12th | Low Group (N=35) Grade 6th | 8th | 10th | 12th | Random Group (N=35) Grade 6th | 8th | 10th | 12th |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | 54.02 | 69.84 | 50.55 | 42.79 | 77.77 | 66.49 | 29.56 | 31.88 | 72.45 | 67.03 | 40.07 | 30.69 |
| Cause | 16.53 | 7.20 | 17.22 | 22.02 | 0.00 | 27.37 | 45.34 | 27.90 | 16.23 | 12.84 | 31.53 | 20.87 |
| Condition | 8.64 | 5.48 | 13.67 | 18.36 | 0.00 | 1.32 | 12.48 | 18.24 | 4.74 | 5.57 | 9.25 | 15.56 |
| Consequence | 2.38 | 3.91 | 5.89 | 4.49 | 5.56 | 3.07 | 0.83 | 6.15 | 0.00 | 5.75 | 3.12 | 7.55 |
| Manner | 0.00 | 5.15 | 3.07 | 5.83 | 0.00 | 0.00 | 3.89 | 5.83 | 0.00 | 1.82 | 4.41 | 7.26 |
| Place | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.44 | 0.00 | 0.00 | 0.00 | 1.25 | 1.01 |
| Degree | 11.11 | 1.01 | 1.04 | 0.24 | 0.00 | 1.75 | 1.33 | 0.00 | 2.63 | 1.25 | 4.61 | 4.39 |
| Purpose | 0.53 | 1.01 | 0.00 | 0.00 | 16.67 | 0.00 | 2.74 | 2.63 | 2.63 | 1.72 | 2.71 | 2.53 |
| Concession | 1.85 | 5.39 | 6.47 | 3.02 | 0.00 | 0.00 | 0.00 | 4.49 | 1.32 | 4.02 | 1.49 | 9.13 |
| Comparison | 4.94 | 1.01 | 2.09 | 3.25 | 0.00 | 0.00 | 1.39 | 2.88 | 0.00 | 0.00 | 1.56 | 1.01 |
| Total | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

measures of elaboration.[1] And this in turn points up the fact that if differing abilities in the use of elaborated language are to be observed, the data must be examined at a deeper level.

## Average Number of Words per Communication Unit

In previous sections of the present monograph, the average number of words per communication unit has been dealt with at length.[2] For purposes of the elaboration study, however, the fact that the sample of language was a selected group of communication units rather than the subject's entire transcript (or entire composition) has made it necessary to re-calculate the average words per unit on the basis of these selected units. (See Table 41.)

In Table 41 (as well as in two tables to follow), *rates of growth* have been presented in addition to mean averages. In each case the *Random group's twelfth grade mean* has been taken as the *base year* (as 100.00 per cent). In other words, the Random group's mean has been viewed as a *typical* score to show what the *typical* adolescent can achieve by grade twelve. The mean averages for all groups and all grades have then been calculated as a *percentage of the base year*. Thus, the reader may examine the growth rates, comparing each group directly to an *average group's*

---

[1] At the risk of laboring the point, the investigator would like to mention once again that in the percentage comparison 10/20 or 50/100 would both equal 50.00 per cent. Thus the evidence presented says nothing about the *number* of clauses used by each group but rather that each group tends to use the same *proportion* of the various types of clauses.

[2] See the methods section for a definition and examples of the communication unit; for data on the High, Low, Central, and Total groups, see the two earlier sections of this monograph dealing with various measures of oral and written language.

## TABLE 41

## AVERAGE NUMBER OF WORDS PER COMMUNICATION UNIT AND RATE OF GROWTH[1]

(Mean)

### Average Number of Words per Communication Unit

### Oral Language

| Grade | High Group (N=35) | Low Group (N=35) | Random Group (N=35) |
|---|---|---|---|
| 6 | 10.32 | 8.57 | 9.82 |
| 8 | 11.59 | 9.52 | 10.71 |
| 10 | 12.34 | 9.41 | 10.68 |
| 12 | 12.84 | 10.65 | 11.70 |

### Written Language

| Grade | High Group (N=35) | Low Group (N=35) | Random Group (N=35) | Hunt's Study[2] (N=18) |
|---|---|---|---|---|
| 6 | 10.23 | 6.91 | 9.04 | ---[3] |
| 8 | 11.24 | 9.42 | 10.37 | 11.50 |
| 10 | 12.59 | 11.03 | 11.79 | ---[3] |
| 12 | 14.06 | 11.24 | 13.27 | 14.40 |

---

[1] In each case, the Random group's twelfth grade mean was taken as 100.00 per cent. Thus, all comparative numbers in the growth rate sections of the table (including data from Hunt's study) are expressed as a percentage of the Random group's twelfth grade mean.

[2] Hunt, op. cit., p. 45.

[3] Hunt's study was done on the written language of three groups of subjects (each N = 18) selected in grades four, eight, and twelve; thus no comparisons are possible in grades six and ten.

### TABLE 41, Continued

### AVERAGE NUMBER OF WORDS PER COMMUNICATION UNIT AND RATE OF GROWTH[1]

(Mean)

Rate of Growth

Oral Language

| Grade | High Group (N=35) | Low Group (N=35) | Random Group (N=35) |
|---|---|---|---|
| 6 | 88.21 | 73.25 | 83.93 |
| 8 | 99.06 | 81.37 | 91.54 |
| 10 | 105.47 | 80.43 | 91.28 |
| 12 | 109.74 | 91.03 | 100.00 |

Written Language

| Grade | High Group (N=35) | Low Group (N=35) | Random Group (N=35) | Hunt's Study[2] (N=18) |
|---|---|---|---|---|
| 6 | 77.09 | 52.07 | 68.12 | ---[3] |
| 8 | 84.70 | 71.51 | 78.15 | 86.66 |
| 10 | 94.88 | 83.12 | 88.85 | ---[3] |
| 12 | 105.95 | 84.70 | 100.00 | 108.52 |

---

[1] In each case, the Random group's twelfth grade mean was taken as 100.00 per cent. Thus, all comparative numbers in the growth rate sections of the table (including data from Hunt's study) are expressed as a percentage of the Random group's twelfth grade mean.

[2] Hunt, op. cit., p. 45.

[3] Hunt's study was done on the written language of three groups of subjects (each N = 18) selected in grades four, eight, and twelve; thus no comparisons are possible in grades six and ten.

*best level of ability* (the Random group's twelfth grade mean).[1]

From examining the data on average number of words per communication unit (Table 41), one can see that on both oral and written language the High group is at one extreme of proficiency (the highest mean average in every year), the Random group is in the middle or average range, and the Low group is at the opposite extreme of proficiency (the lowest mean average in every year).[2]

The rate of growth section of Table 41 is also of interest, particularly since it points up differing degrees of proficiency when oral language is compared to written language. For example, in *grade eight* the High group's *oral* language growth rate virtually matches that of the Random group in *grade twelve*. On *written* language, however, it is not until grade twelve that the High group's growth rate exceeds that of the Random group.[3]

---

[1] For those not familiar with this type of growth rate, it may be stated that the mathematics of the computations are actually very straightforward. In Table 41 for example (oral language), the *sixth* grade rate of growth is calculated as follows:

High Group: (10.32 ÷ 11.70 = 88.21%)
Low Group : ( 8.57 ÷ 11.70 = 73.25%)
Random Group: ( 9.82 ÷ 11.70 = 83.93%)

In grade eight the same procedure would be followed, always using the Random twelfth (11.70) as the *base*. When the computation is done on written language (or any other type of data), the procedure is identical except that the Random group's twelfth grade mean *on that particular piece of data* is naturally the base number used in the computation.

[2] The findings on average number of words per unit in the elaboration study are naturally exceedingly similar to those presented previously when using the subject's entire transcript. The subjects tend to use a slightly higher average number of words per unit here (in the elaboration study); but this, of course, is precisely what one would expect since these particular communication units were purposely selected from flows of language. (Compare Table 41 to Table 18.)

[3] From the progression of percentages in the written language growth rates, one would assume that the High group in grade eleven (if data had been presented in that year) would probably have equaled or surpassed the Random group's twelfth grade level.

For purposes of comparison data have also been presented in Table 41 on the average number of words per written communication unit found in Hunt's study.[1] From this comparison the reader can see that Hunt's findings place the average number of words per written communication unit (for an average group of subjects) at a higher point than that achieved by the High group in the present research. However, this is not necessarily a fault in either study (Hunt's or the present study). As language research proceeds throughout the country, norms of behavior will undoubtedly be established.

## *A Mathematical Problem Pertaining to Average Number of Clauses per Communication Unit*

In calculating the average number of clauses per communication unit, there is a problem of mathematics which is difficult to overcome. Basically, the question is this: When a given subject has 30 communication units and a total of 10 dependent clauses within those 30 units, should comparisons be made on the basis of the *10 dependent clauses* or on the basis of 40 clauses (30 main clauses *plus* 10 dependent clauses)?

Logically, it would seem as if the High, Low, and Random groups should be compared on the basis of their *dependent* clauses --particularly since the focus is on elaboration, and dependent clauses are obviously a key element in elaborate usage. It seems to us that a combination of main clauses *added* to dependent clauses introduces an element of distortion into the growth rates computed for each group. In effect, using this combination of clauses (main plus dependent) *makes it appear* as if *all* groups begin in grade six at a point much closer to the Random group's twelfth grade mean than would be the case if only dependent clauses were used.[2] However, since the standard procedure in computing the average number of clauses per communication unit has been to use a combination of main clauses added to dependent clauses, the investigator has felt it essential to include two separate computations: (1) the average number of clauses per communication unit (main plus dependent) and (2) the average number of dependent clauses per communication unit.

---

[1] See Hunt, *op. cit.*, p. 45. Note that Hunt uses the term T-unit rather than communication unit.

[2] As a hypothetical example one can think of two subjects, one of whom has 100 main clauses and 10 dependent clauses while the second has 100 main clauses and 20 dependent clauses. Obviously, 110 compared to 120 makes the two subjects appear quite close together whereas 10 compared to 20 makes them seem quite far apart.

### Average Number of Clauses per Communication Unit

The findings on average number of clauses per communication unit (main clauses plus dependent clauses) are presented in Table 42. These data clearly indicate that on both oral and written language, the High group invariably has a higher average number of clauses per communication unit than either the Random group or the Low group (with the exception of grade twelve when the High and Random groups are equal). Without exception the Low group, in both oral and written language, shows the least degree of proficiency on this measure of elaboration.

For purposes of comparison, Hunt's average number of clauses per written communication unit have been presented in Table 42.[1] In grade eight, Hunt's study places the average number of clauses per communication unit (for an average group of subjects) at approximately the level of the Low group whereas at grade twelve his data place the level at a point slightly above the High group. It should be noted, however, that these differences in findings are not necessarily crucial. Intensive research into language ability is a relatively recent phenomenon, and as further research is undertaken definitive norms of language proficiency will undoubtedly be established.

The growth rates on average number of clauses per examination unit (main clauses plus dependent clauses) are also of considerable interest, particularly in light of the mathematical problem discussed in the section above. For example, the growth rates on oral language (Table 42) make it appear as if all groups in grade six had already achieved well over 80 per cent of the Random group's twelfth grade level. This, as will be seen presently, is a deceptively high series of growth rate figures resulting from the fact that the inclusion of main clauses in the computations produces an artificially high base from which it is virtually impossible mathematically to achieve

---

[1] Hunt, op. cit., p. 45. Note that Hunt uses the term T-unit rather than communication unit.

## TABLE 42

## AVERAGE NUMBER OF CLAUSES PER COMMUNICATION UNIT AND RATE OF GROWTH[1]

### Using Main Clauses Added to Dependent Clauses (Mean)

### Average Number of Clauses per Communication Unit

Oral Language

| Grade | High Group (N=35) | Low Group (N=35) | Random Group (N=35) |
|---|---|---|---|
| 6 | 1.41 | 1.29 | 1.36 |
| 8 | 1.45 | 1.30 | 1.39 |
| 10 | 1.60 | 1.33 | 1.48 |
| 12 | 1.67 | 1.45 | 1.57 |

Written Language

| Grade | High Group (N=35) | Low Group (N=35) | Random Group (N=35) | Hunt's Study[2] (N=18) |
|---|---|---|---|---|
| 6 | 1.37 | 1.01* | 1.28 | ---[3] |
| 8 | 1.53 | 1.40 | 1.49 | 1.42 |
| 10 | 1.52 | 1.51 | 1.52 | ---[3] |
| 12 | 1.65 | 1.52 | 1.58 | 1.68 |

---

[1] In each case, the Random group's twelfth grade mean was taken as 100.00 per cent. Thus, all comparative numbers in the growth rate sections of the table (including data from Hunt's study) are expressed as a percentage of the Random group's twelfth grade mean.

[2] Hunt, *op. cit.*, p. 45.

[3] Hunt's study was done on the written language of three groups of subjects (each N = 18) selected in grades four, eight, and twelve; thus no comparisons are possible in grades six and ten.

* Subjects extremely low in language proficiency sometimes create problems of comparison. In this case six subjects at the sixth grade level were actually incapable of writing a single meaningful communication unit. (They wrote a few unconnected words scattered on a sheet of paper.) These subjects were taken to have an average number of clauses per communication unit of 0.00 since it was felt that all subjects in the Low group should be included in the computations. This, of course, reduced the overall mean average of the Low group to the point shown.

## TABLE 42

## AVERAGE NUMBER OF CLAUSES PER COMMUNICATION UNIT AND RATE OF GROWTH[1]

Using Main Clauses Added to Dependent Clauses
(Mean)

### Average Number of Clauses per Communication Unit

### Oral Language

| Grade | High Group (N=35) | Low Group (N=35) | Random Group (N=35) |
|---|---|---|---|
| 6 | 1.41 | 1.29 | 1.36 |
| 8 | 1.45 | 1.30 | 1.39 |
| 10 | 1.60 | 1.33 | 1.48 |
| 12 | 1.67 | 1.45 | 1.57 |

### Written Language

| Grade | High Group (N=35) | Low Group (N=35) | Random Group (N=35) | Hunt's Study[2] (N=18) |
|---|---|---|---|---|
| 6 | 1.37 | 1.01* | 1.28 | ---[3] |
| 8 | 1.53 | 1.40 | 1.49 | 1.42 |
| 10 | 1.52 | 1.51 | 1.52 | ---[3] |
| 12 | 1.65 | 1.52 | 1.58 | 1.68 |

---

[1] In each case, the Random group's twelfth grade mean was taken as 100.00 per cent. Thus, all comparative numbers in the growth rate sections of the table (including data from Hunt's study) are expressed as a percentage of the Random group's twelfth grade mean.

[2] Hunt, op. cit., p. 45.

[3] Hunt's study was done on the written language of three groups of subjects (each N = 18) selected in grades four, eight, and twelve; thus no comparisons are possible in grades six and ten.

* Subjects extremely low in language proficiency sometimes create problems of comparison. In this case six subjects at the sixth grade level were actually incapable of writing a single meaningful communication unit. (They wrote a few unconnected words scattered on a sheet of paper.) These subjects were taken to have an average number of clauses per communication unit of 0.00 since it was felt that all subjects in the Low group should be included in the computations. This, of course, reduced the overall mean average of the Low group to the point shown.

## TABLE 42, Continued

## AVERAGE NUMBER OF CLAUSES PER COMMUNICATION UNIT AND RATE OF GROWTH[1]

### Using Main Clauses Added to Dependent Clauses (Mean)

### Rate of Growth

### Oral Language

| Grade | High Group (N=35) | Low Group (N=35) | Random Group (N=35) |
|---|---|---|---|
| 6 | 89.81 | 82.17 | 86.62 |
| 8 | 92.36 | 82.80 | 88.54 |
| 10 | 101.91 | 84.71 | 94.27 |
| 12 | 106.37 | 92.36 | 100.00 |

### Written Language

| Grade | High Group (N=35) | Low Group (N=35) | Random Group (N=35) | Hunt's Study[2] (N=18) |
|---|---|---|---|---|
| 6 | 86.71 | 63.92 | 81.01 | ---[3] |
| 8 | 96.84 | 88.61 | 94.30 | 89.87 |
| 10 | 96.20 | 95.57 | 96.20 | ---[3] |
| 12 | 104.43 | 96.20 | 100.00 | 106.33 |

---

[1] In each case, the Random group's twelfth grade mean was taken as 100.00 per cent. Thus, all comparative numbers in the growth rate sections of the table (including data from Hunt's study) are expressed as a percentage of the Random group's twelfth grade mean.

[2] Hunt, _op_. _cit_., p. 45.

[3] Hunt's study was done on the written language of three groups of subjects (each N - 18) selected in grades four, eight, and twelve; thus no comparisons are possible in grades six and ten.

* Subjects extremely low in language proficiency sometimes create problems of comparison. In this case six subjects at the sixth grade level were actually incapable of writing a single meaningful communication unit. (They wrote a few unconnected words scattered on a sheet of paper.) These subjects were taken to have an average number of clauses per communication unit of 0.00 since it was felt that all subjects in the Low group should be included in the computations. This, of course, reduced the overall mean average of the Low group to the point shown.

further growth.[1]

## Average Number of Dependent Clauses per Communication Unit

The evidence on average number of *dependent* clauses per communication unit is presented in Table 43. In this table the reader should note that there are both similarities and differences between these findings (Table 43) and those presented in Table 42.

On the question of *mean averages*, the two tables point up the same basic finding: in both oral and written language, the High group is invariably at one extreme (the highest), the Random group falls into the middle or average range, and the Low group is invariably at the opposite extreme (the lowest).

The growth rates, however, are markedly different for all groups (different from Table 42) because of the fact that the present computation uses only *dependent* clauses. For example, in Table 42 (when both main and dependent clauses were used in the computations) the Low group's *oral* growth rate in grade six was 82.17 per cent. In the present computation, using only dependent clauses (Table 43) the Low group's oral growth rate is only 51.72 per cent--a difference of over 30 per cent.

Further comparisons between Tables 42 and 43 indicate that in every case equally striking differences in growth rates are found for all groups on both oral and written language. To

---

[1] The point to bear in mind is that when one uses a combination of main clauses and dependent clauses in the computations, even a pre-school child who speaks without the use of any dependent clauses whatsoever will still receive an average number of clauses per unit of 1.00. This results from the fact that *each communication unit is counted as a main clause*. In other words the subject is *automatically* credited with a minimum average of 1.00. The mathematical calculation on this same pre-school child would be as follows:

$$\frac{\text{(Minimum average)}}{\text{(Random twelfth oral mean)}} \qquad \frac{1.00}{1.57} = 63.69\%$$

Thus, by virtue of choosing a poor mathematical procedure we would be asserting that almost 64 per cent of growth in elaborated usage takes place before the subject even enters kindergarten.

illustrate this point more clearly the *oral* growth rates on average number of clauses per communication units (those in Tables 42 and 43) have been presented side-by-side to facilitate comparison. (See Table 44 and Figure 18.)

In either case (Table 44 or Figure 18) the conclusion to be drawn seems obvious. When main clauses are added to dependent clauses, the resulting computation *makes it appear* as if *all* groups start at a high point in grade six and progress relatively little in the following years. However, when *only dependent* clauses are used to compute the average number of clauses per communication unit, each group starts at a much lower point and exhibits obvious spurts of growth between grades six and twelve.

In addition, the growth rate data on *dependent* clauses make it possible to focus on major differences among the groups. For example, the High group experiences its greatest spurt of growth between grades eight and ten whereas the Low group remains at a low level through grade ten and makes its largest gain between grades ten and twelve. Further, we can see that the Low group is approximately four years behind the High group in use of dependent clauses; i.e., the Low group in grade twelve just barely surpasses the High group's eighth grade level.

Thus it seems apparent that *if one is to focus on the precise years* when actual growth in elaborated usage occurs, one must focus on the use of *dependent* clauses rather than allowing main clauses to contaminate the data.

### Summary on Elaboration

The elaboration of language has been examined from two completely different points of view. In the first case, the analysis focused on *percentage* comparisons of the High, Low, and Random groups in order to determine whether or not the three groups use different *proportions* of (1) the ten basic structural patterns, (2) noun, adverb, and adjective clauses, (3) noun clauses as to function, and (4) types of adverb clauses.

The findings on these first four measures indicate that no remarkable differences exist among the groups. In other words, *within the limits of their relative abilities to use language*, each group tends to use roughly the same *proportion* of the various types of sentence patterns, noun clauses, adverb clauses, etc. These findings, however, even though they might be termed *negative* findings, lead to a very important conclusion: it is not

## TABLE 43

## AVERAGE NUMBER OF DEPENDENT CLAUSES PER COMMUNICATION UNIT AND RATE OF GROWTH[1]

(Mean)

### Average Number of Dependent Clauses per Communication Unit[2]

Oral Language

| Grade | High Group (N=35) | Low Group (N=35) | Random Group (N=35) |
|---|---|---|---|
| 6 | 0.41 | 0.30 | 0.37 |
| 8 | 0.45 | 0.30 | 0.39 |
| 10 | 0.61 | 0.33 | 0.48 |
| 12 | 0.67 | 0.46 | 0.58 |

Written Language

| Grade | High Group (N=35) | Low Group (N=35) | Random Group (N=35) |
|---|---|---|---|
| 6 | 0.40 | 0.18 | 0.29 |
| 8 | 0.54 | 0.40 | 0.50 |
| 10 | 0.53 | 0.51 | 0.52 |
| 12 | 0.66 | 0.52 | 0.60 |

---

[1] In each case, the Random group's twelfth grade mean was taken as 100.00 per cent. Thus, all comparative numbers in the growth rate sections of the table are expressed as a percentage of the Random group's twelfth grade mean.

[2] Note that a mean of 0.25 would indicate an average of 1 dependent clause per every 4 communication units; 0.50 would indicate an average of 1 dependent clause per every 2 communication units, etc.

## TABLE 43, Continued

## AVERAGE NUMBER OF DEPENDENT CLAUSES PER COMMUNICATION UNIT AND RATE OF GROWTH[1]

(Mean)

### Rate of Growth

#### Oral Language

| Grade | High Group (N=35) | Low Group (N=35) | Random Group (N=35) |
|---|---|---|---|
| 6 | 70.69 | 51.72 | 63.79 |
| 8 | 77.59 | 51.72 | 67.24 |
| 10 | 105.17 | 56.90 | 82.76 |
| 12 | 115.52 | 79.31 | 100.00 |

#### Written Language

| Grade | High Group (N=35) | Low Group (N=35) | Random Group (N=35) |
|---|---|---|---|
| 6 | 66.67 | 30.00 | 48.33 |
| 8 | 90.00 | 66.67 | 83.33 |
| 10 | 88.33 | 85.00 | 86.67 |
| 12 | 110.00 | 86.67 | 100.00 |

---

[1] In each case, the Random group's twelfth grade mean was taken as 100.00 per cent. Thus, all comparative numbers in the growth rate sections of the table are expressed as a percentage of the Random group's twelfth grade mean.

[2] Note that a mean of 0.25 would indicate an average of 1 dependent clause per every 4 communication units; 0.50 would indicate an average of 1 dependent clause per every 2 communication units, etc.

## TABLE 44

## A COMPARISON OF GROWTH RATES USING ALTERNATIVE METHODS OF COMPUTATION

Oral language growth rates on average number of clauses per communication unit when using main clauses added to dependent clauses[1]

| Grade | High Group (N=35) | Low Group (N=35) | Random Group (N=35) |
|---|---|---|---|
| 6 | 89.81 | 82.17 | 86.62 |
| 8 | 92.36 | 82.80 | 88.54 |
| 10 | 101.91 | 84.71 | 94.27 |
| 12 | 106.37 | 92.36 | 100.00 |

Oral language growth rates on average number of clauses per communication unit when using only dependent clauses[2]

| Grade | High Group (N=35) | Low Group (N=35) | Random Group (N=35) |
|---|---|---|---|
| 6 | 70.69 | 51.72 | 63.79 |
| 8 | 77.59 | 51.72 | 67.24 |
| 10 | 105.17 | 56.90 | 82.76 |
| 12 | 115.52 | 79.31 | 100.00 |

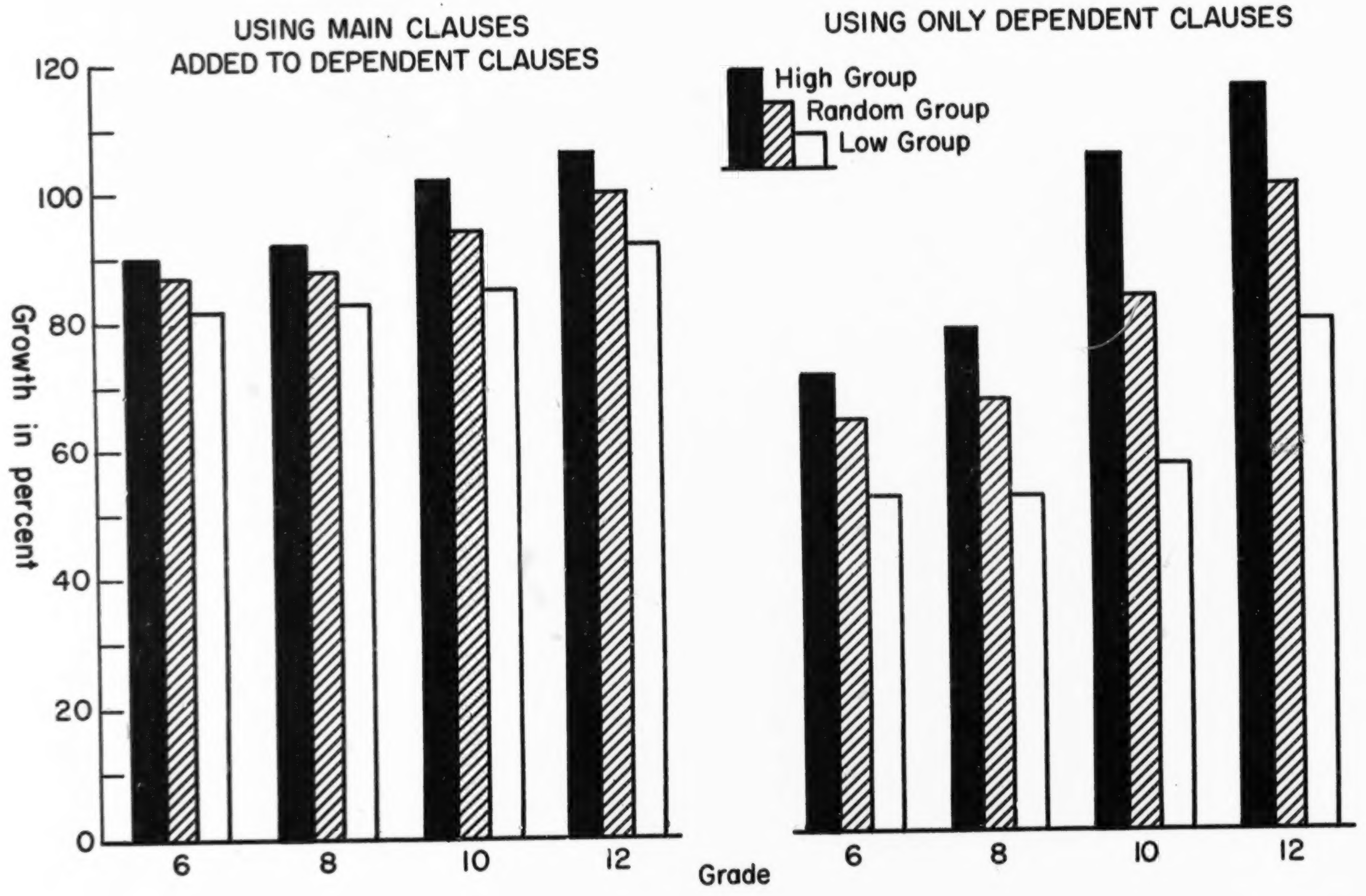
---

[1] Figures taken directly from Table 42.

[2] Figures taken directly from Table 43.

FIGURE 18

A COMPARISON OF GROWTH RATES USING ALTERNATIVE METHODS OF COMPUTATION
(Growth rates computed as a percentage of the Random twelfth grade mean)



USING MAIN CLAUSES
ADDED TO DEPENDENT CLAUSES

USING ONLY DEPENDENT CLAUSES

the relative *proportions* of structural patterns, noun clauses, and adverb clauses which will distinguish one's proficiency or lack of proficiency with language but rather what is accomplished within the communication unit in terms of expanding, broadening, and *elaborating* one's spoken and written language.

The second half of the elaboration study made use of three measuring devices designed to probe more deeply into the question of elaborated usage. These were (1) the average number of words per communication unit, (2) the average number of clauses per communication unit (main plus dependent), and (3) the average number of *dependent* clauses per communication unit.

From the evidence presented on these three measures, the reader has seen that in every case (all years on both oral and written language) the *mean averages* indicate substantial, clearly defined differences among the High, Low, and Random groups of subjects. The High group invariably shows the greatest degree of proficiency in using elaborated language; the Random group falls into the middle or average range; and the Low group invariably shows the least degree of proficiency.

For purposes of comparison, findings from Kellogg Hunt's research were included in those tables where both Hunt's study and the present research followed the same methodology. From the comparison shown, Hunt's findings generally place the mean for an average group of subjects at a point slightly higher than that of the High group in the present research. The reader should note, however, that these differences between the two research studies are not necessarily of crucial importance. Intensive research into language ability is a relatively recent phenomenon; and as other studies examine this facet of human behavior, definitive norms of development will undoubtedly be established.

On the question of growth rates, the investigator has pointed out that in the case of total clauses (main plus dependent) the standard methodology is in need of improvement. In order to focus on the *precise years* of growth in elaborated usage, the best method has proven to be the average number of *dependent* clauses per unit. This measure is not contaminated by the inclusion of main clauses, and it points up the fact that growth in elaborated usage is *not virtually completed by grade six* but is actually *a steady process showing substantial improvements by each group from grade six through grade twelve*.

## PART IX: STANDARD ENGLISH USAGE[1]

### The Definition of Standard English Usage

For use in this research, the investigator has adopted Fries' widely accepted definition of standard English usage. According to Fries, acceptable standard English is

> a set of language habits in which the major matters of the political, social, economic, educational, religious life of this country are carried on. To these language habits is attached a certain prestige, for the use of them suggests constant relations with those responsible for the important affairs of our communities. It is this set of language habits . . . which is the "standard" not because it is any more correct or more beautiful or more capable than other varieties of English; it is "standard" solely because it is the particular type of English used in the conduct of the important affairs of our people. It is also the type of English used by the socially acceptable of most of our communities, and insofar as that is true it has become social or class dialect in the United States.[2]

It follows, then, that we are not concerned here with regional variations in vocabulary and pronunciation but rather with the problems some pupils have in speaking standard English as it is typically used by most Americans. To be realistic, we must acknowledge the fact that most children need to perfect or acquire the prestige dialect--not because standard English is correct or superior in itself but because society exacts severe penalties of those who do not speak it. Thus the purpose of this phase of the research is to examine the most crucial and frequent usage difficulties the subjects encounter in their oral language, focusing in large measure on the problems of *social class dialect* in order that teachers may decide where to place instructional emphasis.

---

[1] The reader should note that this section of the present monograph completes a previous publication by the investigator. See Walter Loban, Problems in Oral English (Champaign, Illinois: National Council of Teachers of English, 1966). The current presentation uses the same definitions, subgroups, and methodology used in the NCTE publication. Thus the reader already familiar with that publication may simply wish to examine the graphic presentation which now includes grades ten, eleven, and twelve.

[2] Charles Carpenter Fries, American English Grammar (New York: Appleton-Century-Crofts, 1940), p. 13.

## A Further Definition of Terms

In this study we are concerned with *obvious* departures or deviations from standard English. We are *not* concerned with disputed items of usage such as *It's me*, *Who are you looking for?* or *Everyone has their instructions*. Instead we mean, by "nonstandard," usages such as these:

> The calf don't want no milk.
> He has ate.
> He washing they clothes.
> They was here yesterday.

Thus, as used in this research, *usage* will mean the established oral language *habits* of an individual. We assume that such usage is internalized by the subject as he hears and imitates the speech of home and neighborhood, that such usage is not a deliberate plan rationalized on a conscious level. It should be clear that this is *not grammar*. *Grammar* is a careful description and analysis of the structure of a language--its sound structure, word structure, phrase and sentence structure. A third term needed for examining spoken language is *rhetoric*, the deliberate conscious strategies a speaker uses to make his language an effective means of communication. Rhetoric transcends grammar and usage, for it concerns such matters as consistency of verb tense from one sentence to another, clear reference of pronouns, and strategic choices among several ways of organizing sentences. Rhetoric is the art of using language effectively *in order to present ideas clearly*. *Usage* may cover vocabulary and pronunciation as well as constructions, but in this research vocabulary and pronunciation are not included.

## The Groups to be Studied and Compared

From the total group of subjects, four subgroups have been selected, and these have been designated respectively as Caucasian (High Language Proficiency), Caucasian (Low Language Proficiency), Negro (Low Language Proficiency), and Random. Each of the first three groups contains twenty-one subjects and was chosen according to ability with language. The Random group contains fifty subjects and was selected from the total sample on an equal probability basis, e.g., with a table of random numbers.

### Method of Selecting the Subgroups

A cumulative average of oral language ratings (by teachers) was computed for all subjects. The three subgroups were then selected on a rank-order basis. As indicated, the Random group was not selected according to language ability.[1]

That some nonstandard language was predominantly a matter of social dialect was obvious from a preliminary examination of the data. Therefore, rather than risk clouding the data by using ethnically mixed groups, the decision was made to study Caucasians and Negroes separately and to use a Random group as a representation of a typically mixed sample of all students. If ethnically mixed groups of twenty-one subjects had been used on a straight rank-order basis, two Negro subjects would have fallen into the group high in language proficiency. Naturally there are in any city Negro children who come from homes where excellent and standard English is spoken. The effort, here, is to use those in the study who speak either a dialect or nonstandard English in order to identify language problems with which the schools can help. Those subjects in the Negro group who rated low in language proficiency proved to be predominantly those whose parents had emigrated from the South and were below average in education and income. Negro children from homes of high income and superior educational background did not, of course, fall into this group.

---

[1] As the investigator indicated previously, the present study completes a monograph published by the NCTE. In the initial monograph the criterion was established to use only those subjects on whom ten successive years of data were available. The need for this criterion resulted from the normal year-to-year attrition in the overall study; i.e., it was felt that complete longitudinal data were necessary in order to preclude the possibility that repeated substitution of subjects might allow individual idiosyncrasies of particular subjects to affect the data grossly. For the present monograph, however, it was felt that little purpose would be served in re-computing the entire deviation study simply to take into account the loss of one or two subjects in each group. Thus in these rare instances (in grades ten, eleven, and twelve) a few substitutions of subjects have been made.

The Random group, representative of the total group, consists of fifty members, forty-four Caucasian, five Negro, and one Oriental. This Random group is drawn from a population sample representing the ethnic, economic, intellectual, and sexual distribution of typical urban school populations in the United States.

## Statistical Problems

In trying to find a method for dealing with language problems as they occur in individual subjects, the research encountered one immediate problem. The individual range in volume of spoken language is quite wide. Because of the nature of language itself, this creates a statistical problem: short simple sentences or one-word answers tend to reduce the probability of usage deviations. In fact, only two subjects, both from the kindergarten year and both speaking very briefly, had "perfection" in usage.

As the statistical work progressed, however, it became obvious that each of the three selected subgroups was clearly a homogeneous unit. The means and medians on various measures indicate that the High Caucasian group is consistently superior to the other two groups on all measures and by approximately the same degree. In addition, the Low Caucasian group and the Negro group reveal not only this consistent relationship to the High Caucasian group, but also a consistent relationship to each other: the Low Caucasian group invariably has less difficulty with standard usage than does the Negro group.

The Random group, of course, is not a homogeneous unit in the same sense as those groups selected on the basis of ethnic background and degree of proficiency with language. However, as one would expect, the means and medians of the Random group typically fall between those of the High Caucasian group and the Low Caucasian group on all the various measures undertaken.

Among the examples of these consistent relationships are the following:

1) The High Caucasian group shows a considerably higher mean and median for total words in communication units than either the Low Caucasian group or the Negro group. In turn, the Low Caucasian group shows a slight superiority to the Negro group on both means and medians except for the medians in grades two and three where both are virtually identical. The Random group falls between the High and Low Caucasian groups for all years on both the mean and median. (See Table 45.)

---

TABLE 45

TOTAL NUMBER OF WORDS IN COMMUNICATION UNITS

High Caucasian, Low Caucasian, Negro, and Random Groups[1]
Grades Kindergarten through Twelve

| Grade | Mean | | | | Median | | | |
|---|---|---|---|---|---|---|---|---|
| | High (Caucasian) | Low (Caucasian) | Low (Negro) | Random | High (Caucasian) | Low (Caucasian) | Low (Negro) | Random |
| Kindergarten | 597.71 | 472.76 | 461.05 | 504.55 | 569 | 451 | 400 | 492 |
| One | 639.52 | 452.86 | 428.52 | 502.83 | 558 | 435 | 308 | 467 |
| Two | 849.43 | 634.52 | 620.24 | 734.41 | 770 | 538 | 539 | 634 |
| Three | 973.38 | 602.90 | 528.48 | 721.53 | 964 | 549 | 548 | 592 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Five | 1396.33 | 1138.52 | 921.29 | 1219.63 | 1255 | 1059 | 862 | 1079 |
| Six | 1824.00 | 1086.86 | 998.19 | 1322.64 | 1722 | 976 | 947 | 1190 |
| Seven | 1701.43 | 1333.05 | 1123.62 | 1375.34 | 1650 | 1339 | 974 | 1326 |
| Eight | 1539.57 | 1313.00 | 1238.29 | 1454.40 | 1507 | 1159 | 1142 | 1195 |
| Nine | 1751.29 | 1348.52 | 1243.90 | 1534.66 | 1684 | 1198 | 1054 | 1322 |
| Ten | 2006.60 | 1499.60 | 1403.60 | 1626.96 | 1752 | 1247 | 1202 | 1422 |
| Eleven | 1645.28 | 1210.40 | 1348.36 | 1370.82 | 1652 | 1132 | 1006 | 1196 |
| Twelve | 1922.40 | 1319.16 | 1245.12 | 1585.58 | 1732 | 1192 | 1022 | 1347 |

---

[1] N = 21 for each selected group.
N = 50 for the Random group.

---

2) On average words per communication unit the situation is identical--a large measure of superiority by the High Caucasian group, a relatively slight lead by the Low Caucasian group over the Negro group.[1] Again, the Random group typically falls between the High and Low Caucasian groups although the median does show several instances in which the Random group and the Low Caucasian group show an almost identical average words per unit. (See Table 46.)

3) The four groups maintain the same positions in respect to one another. Measures of I.Q., of writing proficiency, of subordinating connectives, and of standard reading scores all show a consistent relationship among the groups. (See Table 47.) As can be seen in this table, one or two subjects in each group are at the extremes on each of these measures of performance (the total range), and this accounts for a slight overlapping. However, the medians clearly differentiate among the groups on each of these measures (with the exception of writing which has only five categories). Thus it can be seen that the teachers' ratings, the method by which the three groups were selected, clearly differentiate among the groups, and it is concluded that these ratings are a valid method of selecting those subjects high or low in language proficiency.

4) Lastly, the socio-economic status of the subjects is precisely what one would expect: regardless of ethnic background, those ranked high in language proficiency are of predominantly high socio-economic status; those ranked low in language proficiency are of predominantly low socio-economic status; those selected at random show a wide range of language ability and a wide range of socio-economic status. (See Table 48.)

---

[1] The average words per communication unit is a measure of considerable significance. Admittedly, a high average of words per communication unit could conceivably be only a measure of verbosity: more words, but no increase in meaningful verbal communication. However, throughout this research, a high average for words per unit has been inevitably coupled with increased complexity of sentence structure. Thus the supremacy of the High Caucasian group on this measure is of even greater significance than it may at first appear, for, as will be shown, this group has far fewer nonstandard deviations than the other groups in spite of the fact that members of the High Caucasian group use greater complexity of sentence structure.

## TABLE 46

### AVERAGE NUMBER OF WORDS PER COMMUNICATION UNIT
### High Caucasian, Low Caucasian, Negro, and Random Groups[1]
### Grades Kindergarten through Twelve

| Grade | Mean<br>High (Caucasian) | Low (Caucasian) | Low (Negro) | Random | Median<br>High (Caucasian) | Low (Caucasian) | Low (Negro) | Random |
|---|---|---|---|---|---|---|---|---|
| Kindergarten | 5.86 | 4.93 | 4.28 | 5.31 | 6.34 | 5.33 | 4.22 | 5.21 |
| One | 7.01 | 5.53 | 4.88 | 6.02 | 7.00 | 5.96 | 4.94 | 6.06 |
| Two | 7.04 | 6.02 | 5.54 | 6.54 | 7.08 | 6.32 | 5.66 | 6.65 |
| Three | 8.05 | 6.70 | 5.80 | 6.93 | 7.61 | 6.91 | 6.26 | 6.89 |
| Four | 8.79 | 7.45 | 6.44 | 7.83 | 8.97 | 7.68 | 6.68 | 7.71 |
| Five | 8.84 | 7.29 | 6.89 | 8.10 | 9.01 | 7.43 | 7.09 | 8.15 |
| Six | 9.70 | 7.62 | 7.58 | 8.49 | 9.80 | 7.69 | 7.51 | 8.33 |
| Seven | 10.55 | 8.80 | 8.01 | 9.35 | 10.78 | 8.91 | 8.19 | 9.22 |
| Eight | 11.02 | 9.24 | 8.30 | 9.50 | 10.61 | 9.24 | 8.33 | 9.56 |
| Nine | 10.89 | 8.88 | 8.56 | 9.70 | 10.66 | 8.88 | 8.45 | 9.40 |
| Ten | 11.17 | 8.75 | 8.19 | 9.61 | 10.58 | 8.91 | 8.12 | 9.44 |
| Eleven | 12.33 | 9.92 | 9.68 | 10.94 | 11.72 | 10.01 | 9.31 | 10.97 |
| Twelve | 13.22 | 10.93 | 10.05 | 11.97 | 12.96 | 10.73 | 10.04 | 11.68 |

---

[1] N = 21 for each selected group.
N = 50 for the Random group.

---

## TABLE 47

### MEDIAN SCORES AND RANGE ON SELECTED MEASURES AT GRADE SIX[1]
### High Caucasian, Low Caucasian, Negro, and Random Groups[2]

| Type of Measure | High (Caucasian)<br>Median | Range | Low (Caucasian)<br>Median | Range | Negro<br>Median | Range[3] | Random<br>Median | Range |
|---|---|---|---|---|---|---|---|---|
| Teachers' rating | 4.14 | 3.97 to 4.56 | 2.65 | 2.11 to 2.89 | 2.32 | 1.75 to 2.60 | 3.42 | 2.20 to 4.56 |
| I. Q. | 120 | 109 to 143 | 96 | 55 to 113 | 86 | 60 to 112 | 110 | 55 to 143 |
| Reading achievement in months above or below chronological age | +50 | +13 to +62 | -8 | -60 to +16 | -24 | -56 to +19 | +2 | -60 to +58 |
| Writing | II | I to II | III | II to V | III | II to V | II | I to V |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Use of sub-ordinating connectives | 46 | 39 to 49 | 31 | 0 to 39 | 19 | 0 to 38 | 41 | 0 to 48 |

---

[1] The maximum possible scores for the measures shown are as follows: teachers' rating = 5.00; I.Q. = indeterminate; reading = +60 months for subjects in grade six; writing = I; use of subordinating connectives = 50.

[2] N = 21 for each ethnically selected group; N = 50 for the Random group.

[3] One subject in the Negro group has consistently higher scores than the other twenty subjects in that group. If this subject had been excluded, the upper limit of the range would have fallen considerably closer to the median.

---

### TABLE 48

### SOCIO-ECONOMIC STATUS

High Caucasian, Low Caucasian, Negro, and Random Groups[1]

| Socio-Economic Status | No. of Subjects Classified as High (Caucasian) | No. of Subjects Classified as Low (Caucasian) | No. of Subjects Classified as Low (Negro) | No. of Subjects Classified as Random |
|---|---|---|---|---|
| I | 10 | 1 | 0 | 5 |
| II | 5 | 6 | 0 | 17 |
| III | 5 | 2 | 0 | 14 |
| IV | 0 | 3 | 1 | 3 |
| V | 0 | 6 | 3 | 5 |
| VI | 1 | 3 | 13 | 5 |
| VII | 0 | 0 | 4 | 1 |
| TOTAL | 21 | 21 | 21 | 50 |

---

[1] N = 21 for each selected group.
N = 50 for the Random group.

In addition to the evidence indicating that the three selected groups are homogeneous units and that the Random group is typical of a cross-section of the population, it was also found that the arithmetic means on the twenty-one separate language deviations and on the number of deviations per equated number of words spoken revealed a consistent relationship. On appropriateness of English usage, the High Caucasian group is typically far superior to all other groups; the Random group falls in the center; the Low Caucasian group falls below the Random group; and the Negro group is last. The *medians* also showed consistent relationships, but the use of medians was ruled out because the High Caucasian, Low Caucasian, and Random groups often had a median of zero on any given deviation for any given year. This was not true of the Negro group, and as a result *any proportional adjustment of the data would have produced fluctuations in the Negro group which were not actually in the data.*[1]

With the use of medians ruled out, the question was then the following: would the use of the arithmetic mean possibly allow a few extreme numbers to skew the data and make the results nonrepresentative? In other words, on any given deviation from accepted usage, would several subjects "have a bad day"? Or would they possibly get tangled in repetitions of the same sentence and speak the same deviation an inordinate number of times. To guard against this possibility, it was decided to subtract the deviations of the *extreme ten per cent* of the subjects before proportionally adjusting the data. In short, the method of analysis decided upon was to eliminate the extremes, equate the data so that it would be comparable from year-to-year and subgroup-to-subgroup, and then to present the arithmetic mean of each particular subgroup. The method used therefore gives a profile for a *typical* subject in a particular category (High Caucasian, Low Caucasian, Negro, or Random).

To simplify the presentation, a list of the categories used in tallying deviations is presented below. Following this, four tables have been presented--one for each subgroup indicating their respective adjusted means on each deviation. Then, following these four tables, each deviation from standard English is treated *individually*, using examples, commentary, and graphs to illustrate the particular problem involved.

---

[1] Trying to deal with zero quantities is one of those frustrating items all researchers inevitably encounter. The problem basically is that 2 X 0 or 10 X 0 or 1/2 X 0 all come out to be zero.

## CATEGORIES USED FOR TALLYING PROBLEMS IN ORAL LANGUAGE

### Verb Problems

1A: Lack of agreement of subject and verb, third person singular (excluding all forms of the verb *to be*)

1B: Lack of agreement of subject and verb for all forms except the third person singular (again excluding all forms of the verb *to be*)

1C: Lack of agreement of subject and verb while using forms of the verb *to be*

1D: Omission of the verb *to be*

1E: Omission of auxiliary verbs

1F: Nonstandard use of verb forms

1G: Inconsistency in the use of tense

### Pronoun Problems

2A: Nonstandard use of pronouns

2B: Use of *that* instead of *who* as a relative pronoun referring to persons

2C: Confusing use of pronouns

### Syntactic Confusion

3A: Ambiguous placement of a word, phrase, or clause

3B: Awkward arrangement or incoherence

4A: Omission (except of auxiliary verbs)

4B: Unnecessary repetition

### Other Problems

5A: Nonstandard connection (prepositions)

5B: Nonstandard connection (conjunctions)

6A: Nonstandard modification (adjectival)

6B: Nonstandard modification (adverbial)

7: Nonstandard use of noun forms

8: Double negatives

9: Nonstandard use of possessives

## TABLE 49

### ADJUSTED MEAN ON NONSTANDARD USAGE BY HIGH CAUCASIAN GROUP PER 1,000 WORDS OF SPOKEN VOLUME
Grades Kindergarten through Twelve
N = 21

| Type of Problem | Kinder-garten | Grade 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1A | 0.09 | 0.18 | 0.14 | 0.24 | 0.04 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.03 | 0.00 | 0.00 |
| 1B | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.05 |
| 1C | 2.28 | 1.86 | 2.40 | 1.83 | 0.85 | 0.45 | 0.49 | 0.46 | 0.60 | 0.40 | 0.63 | 0.45 | 0.55 |
| 1D | 0.30 | 0.27 | 0.14 | 0.06 | 0.04 | 0.08 | 0.06 | 0.00 | 0.00 | 0.03 | 0.03 | 0.09 | 0.26 |
| 1E | 0.40 | 0.54 | 0.42 | 0.41 | 0.22 | 0.25 | 0.27 | 0.23 | 0.30 | 0.27 | 0.15 | 0.18 | 0.24 |
| 1F | 1.28 | 0.97 | 0.42 | 0.36 | 0.63 | 0.45 | 0.24 | 0.55 | 0.30 | 0.23 | 0.15 | 0.36 | 0.10 |
| 1G | 0.70 | 0.97 | 0.97 | 1.00 | 2.55 | 2.52 | 1.89 | 1.74 | 1.20 | 1.60 | 1.75 | 0.69 | 0.90 |
| 2A | 1.39 | 0.70 | 1.31 | 0.47 | 0.67 | 0.77 | 0.67 | 0.92 | 0.45 | 0.43 | 0.40 | 0.84 | 0.82 |
| 2B | 0.09 | 0.79 | 0.34 | 0.76 | 0.54 | 1.06 | 0.73 | 0.88 | 0.90 | 0.83 | 0.95 | 0.75 | 1.06 |
| 2C | 0.09 | 0.27 | 0.14 | 0.53 | 0.54 | 0.57 | 0.49 | 1.87 | 1.10 | 0.73 | 1.47 | 0.69 | 0.71 |
| 3A | 0.09 | 0.35 | 0.61 | 0.53 | 0.45 | 0.32 | 0.82 | 1.02 | 1.28 | 1.13 | 1.65 | 1.53 | 1.35 |
| 3B | 1.49 | 0.44 | 0.27 | 0.53 | 0.45 | 0.69 | 0.52 | 0.55 | 0.53 | 0.76 | 0.45 | 0.54 | 0.48 |
| 4A | 2.19 | 1.68 | 1.58 | 1.72 | 1.66 | 1.10 | 1.47 | 1.08 | 1.20 | 1.50 | 0.92 | 1.17 | 1.24 |
| 4B | 0.49 | 0.35 | 0.61 | 0.47 | 0.40 | 0.36 | 0.49 | 0.72 | 0.34 | 0.56 | 1.65 | 1.65 | 1.48 |
| 5A | 0.89 | 0.44 | 0.34 | 0.24 | 0.31 | 0.41 | 0.31 | 0.42 | 0.57 | 0.40 | 0.35 | 0.39 | 0.34 |
| 5B | 0.09 | 0.00 | 0.27 | 0.12 | 0.31 | 0.04 | 0.12 | 0.33 | 0.11 | 0.27 | 0.68 | 0.69 | 0.58 |
| 6A | 0.70 | 1.14 | 0.42 | 0.36 | 0.22 | 0.16 | 0.19 | 0.42 | 0.30 | 0.37 | 0.20 | 0.24 | 0.24 |
| 6B | 0.89 | 0.27 | 0.34 | 1.00 | 0.27 | 0.36 | 0.43 | 0.39 | 0.45 | 0.16 | 0.20 | 0.27 | 0.16 |
| 7 | 0.49 | 0.27 | 0.34 | 0.29 | 0.14 | 0.12 | 0.12 | 0.33 | 0.34 | 0.23 | 0.30 | 0.42 | 0.26 |
| 8 | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 |
| TOTAL | 14.03 | 11.49 | 11.06 | 10.92 | 10.29 | 9.71 | 9.31 | 11.91 | 10.01 | 9.90 | 11.96 | 10.95 | 10.85 |

TABLE 50

ADJUSTED MEAN ON NONSTANDARD USAGE BY LOW CAUCASIAN GROUP
PER 1,000 WORDS OF SPOKEN VOLUME
Grades Kindergarten through Twelve
N = 21

| Type of Problem | Kinder-garten | Grade 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1A | 0.99 | 0.53 | 0.81 | 0.98 | 0.90 | 0.25 | 0.82 | 0.22 | 0.76 | 0.14 | 0.24 | 0.24 | 0.12 |
| 1B | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.04 | 0.04 | 0.00 | 0.00 |
| 1C | 0.87 | 2.01 | 2.17 | 2.32 | 1.61 | 1.16 | 1.80 | 1.86 | 1.49 | 1.60 | 1.31 | 0.94 | 0.89 |
| 1D | 0.26 | 0.28 | 0.36 | 0.68 | 0.21 | 0.05 | 0.27 | 0.04 | 0.14 | 0.22 | 0.04 | 0.08 | 0.04 |
| 1E | 1.98 | 0.66 | 1.00 | 1.36 | 0.77 | 0.51 | 0.98 | 0.18 | 0.27 | 0.31 | 0.34 | 0.37 | 0.50 |
| 1F | 1.60 | 1.48 | 1.17 | 0.98 | 1.26 | 1.36 | 0.98 | 1.55 | 1.40 | 1.42 | 0.76 | 0.45 | 0.66 |
| 1G | 1.60 | 3.89 | 1.45 | 2.23 | 3.08 | 4.23 | 3.05 | 4.60 | 4.24 | 3.91 | 3.66 | 2.25 | 2.60 |
| 2A | 1.11 | 2.14 | 1.72 | 1.36 | 1.12 | 0.85 | 1.20 | 1.23 | 2.07 | 1.42 | 1.31 | 1.10 | 1.00 |
| 2B | 0.00 | 0.28 | 0.55 | 0.20 | 1.05 | 0.51 | 0.82 | 1.46 | 1.08 | 0.67 | 0.90 | 1.06 | 1.90 |
| 2C | 0.00 | 0.13 | 0.09 | 0.20 | 0.56 | 1.00 | 0.70 | 4.77 | 3.88 | 3.24 | 2.17 | 2.12 | 1.20 |
| 3A | 0.12 | 0.66 | 0.81 | 0.48 | 0.77 | 0.60 | 1.58 | 1.90 | 1.85 | 2.14 | 1.73 | 1.88 | 1.28 |
| 3B | 1.74 | 1.20 | 1.72 | 1.25 | 1.48 | 0.80 | 1.25 | 1.99 | 1.08 | 1.60 | 0.80 | 1.30 | 1.35 |
| 4A | 3.95 | 4.02 | 2.08 | 3.00 | 2.72 | 1.41 | 2.29 | 2.79 | 2.57 | 3.38 | 1.56 | 2.29 | 2.13 |
| 4B | 0.26 | 0.53 | 0.72 | 0.00 | 0.62 | 0.20 | 0.87 | 0.62 | 0.99 | 0.84 | 0.87 | 1.55 | 2.09 |
| 5A | 0.61 | 0.81 | 0.19 | 0.98 | 0.07 | 0.25 | 0.87 | 0.88 | 1.40 | 1.11 | 0.52 | 1.06 | 0.97 |
| 5B | 0.00 | 0.28 | 0.09 | 0.20 | 0.07 | 0.15 | 0.27 | 0.39 | 0.95 | 0.22 | 0.38 | 0.37 | 0.27 |
| 6A | 0.49 | 0.66 | 0.81 | 0.87 | 0.84 | 0.45 | 0.65 | 0.31 | 0.72 | 0.62 | 0.49 | 0.29 | 0.47 |
| 6B | 0.75 | 0.53 | 0.36 | 0.68 | 0.56 | 0.40 | 0.55 | 0.45 | 0.63 | 0.62 | 0.49 | 1.06 | 0.62 |
| 7 | 0.99 | 0.81 | 1.09 | 0.87 | 0.62 | 0.20 | 0.98 | 1.37 | 1.31 | 0.84 | 0.49 | 0.32 | 0.85 |
| 8 | 0.26 | 0.00 | 0.19 | 0.20 | 0.00 | 0.15 | 0.22 | 0.13 | 0.36 | 0.35 | 0.11 | 0.13 | 0.12 |
| 9 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL | 17.58 | 20.90 | 17.38 | 18.84 | 18.31 | 14.53 | 20.15 | 26.78 | 27.19 | 24.69 | 18.21 | 18.86 | 19.06 |

## TABLE 51

ADJUSTED MEAN ON NONSTANDARD USAGE BY NEGRO GROUP
PER 1,000 WORDS OF SPOKEN VOLUME
Grades Kindergarten through Twelve
N = 21

| Type of Problem | Grade<br>Kindergarten | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1A | 12.25 | 10.02 | 11.93 | 8.45 | 7.66 | 4.57 | 3.86 | 3.97 | 3.43 | 2.25 | 2.24 | 4.05 | 4.32 |
| 1B | 0.43 | 0.47 | 0.50 | 0.45 | 0.28 | 0.13 | 0.00 | 0.17 | 0.00 | 0.00 | 0.05 | 0.08 | 0.09 |
| 1C | 4.09 | 3.54 | 4.28 | 5.07 | 3.92 | 2.65 | 3.86 | 4.47 | 4.13 | 3.11 | 3.04 | 1.75 | 1.81 |
| 1D | 2.38 | 3.25 | 1.53 | 1.45 | 0.94 | 0.68 | 0.47 | 0.70 | 0.44 | 0.48 | 0.33 | 0.21 | 0.42 |
| 1E | 13.38 | 9.72 | 6.63 | 8.56 | 5.88 | 3.39 | 3.16 | 4.79 | 2.29 | 2.54 | 1.62 | 1.59 | 1.02 |
| 1F | 4.49 | 4.01 | 3.25 | 2.82 | 2.80 | 3.27 | 2.58 | 3.11 | 4.73 | 4.02 | 2.16 | 2.74 | 2.09 |
| 1G | 6.61 | 3.08 | 4.28 | 4.51 | 3.35 | 5.87 | 6.85 | 8.01 | 7.37 | 5.51 | 5.16 | 4.29 | 3.16 |
| 2A | 6.34 | 3.25 | 3.06 | 3.15 | 2.52 | 2.41 | 2.40 | 4.19 | 3.43 | 3.40 | 1.79 | 1.88 | 2.65 |
| 2B | 0.00 | 0.15 | 0.21 | 0.24 | 0.28 | 0.19 | 0.29 | 0.60 | 0.35 | 0.76 | 1.04 | 1.27 | 1.11 |
| 2C | 0.00 | 0.15 | 0.31 | 0.11 | 0.09 | 0.49 | 0.82 | 4.03 | 5.13 | 3.35 | 3.04 | 1.51 | 1.95 |
| 3A | 0.86 | 0.47 | 0.62 | 0.56 | 0.74 | 1.04 | 1.58 | 2.24 | 2.49 | 1.63 | 2.45 | 2.09 | 1.86 |
| 3B | 2.97 | 1.08 | 1.12 | 1.13 | 1.40 | 1.61 | 1.52 | 1.90 | 1.49 | 2.01 | 1.24 | 1.88 | 1.16 |
| 4A | 9.02 | 6.94 | 6.22 | 5.63 | 4.00 | 3.39 | 4.04 | 5.56 | 4.48 | 3.16 | 1.83 | 2.25 | 2.19 |
| 4B | 0.13 | 1.23 | 0.72 | 0.56 | 1.31 | 0.74 | 1.29 | 2.67 | 1.45 | 1.15 | 1.42 | 2.62 | 2.37 |
| 5A | 1.12 | 0.32 | 0.62 | 0.68 | 0.83 | 0.38 | 1.23 | 0.82 | 1.84 | 1.25 | 0.70 | 1.19 | 0.97 |
| 5B | 0.86 | 0.00 | 0.31 | 0.24 | 0.00 | 0.31 | 0.36 | 0.38 | 0.50 | 0.38 | 0.54 | 0.58 | 1.02 |
| 6A | 0.13 | 1.55 | 0.91 | 1.45 | 0.94 | 1.12 | 1.58 | 1.42 | 1.39 | 0.62 | 1.58 | 1.39 | 1.30 |
| 6B | 0.00 | 0.62 | 1.63 | 0.90 | 0.94 | 1.36 | 0.93 | 1.90 | 2.09 | 1.15 | 1.08 | 2.25 | 0.88 |
| 7 | 2.25 | 3.54 | 1.94 | 2.48 | 2.43 | 1.91 | 1.23 | 2.84 | 1.79 | 2.39 | 1.21 | 1.06 | 1.26 |
| 8 | 1.98 | 1.23 | 1.72 | 1.45 | 1.68 | 1.91 | 1.81 | 0.82 | 1.84 | 1.87 | 0.70 | 1.11 | 0.88 |
| 9 | 0.56 | 0.76 | 0.21 | 0.24 | 0.28 | 0.19 | 0.00 | 0.00 | 0.00 | 0.10 | 0.00 | 0.00 | 0.00 |
| TOTAL | 69.85 | 55.38 | 52.00 | 50.13 | 42.27 | 37.61 | 39.86 | 54.59 | 50.66 | 41.13 | 33.22 | 35.79 | 32.51 |

## TABLE 52

### ADJUSTED MEAN ON NONSTANDARD USAGE BY RANDOM GROUP PER 1,000 WORDS OF SPOKEN VOLUME

Grades Kindergarten through Twelve

N = 50

| Type of Problem | Kinder-garten | Grade 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1A | 1.14 | 0.89 | 0.57 | 0.45 | 0.24 | 0.10 | 0.20 | 0.06 | 0.07 | 0.08 | 0.10 | 0.02 | 0.04 |
| 1B | 0.04 | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1C | 1.29 | 3.11 | 1.95 | 2.79 | 1.43 | 0.91 | 1.06 | 1.10 | 1.16 | 1.00 | 0.79 | 0.62 | 0.86 |
| 1D | 0.82 | 0.61 | 0.41 | 0.25 | 0.26 | 0.00 | 0.14 | 0.02 | 0.06 | 0.05 | 0.04 | 0.19 | 0.13 |
| 1E | 1.33 | 1.12 | 0.54 | 0.91 | 0.39 | 0.28 | 0.49 | 0.20 | 0.20 | 0.28 | 0.25 | 0.19 | 0.13 |
| 1F | 1.29 | 1.08 | 0.67 | 0.66 | 0.72 | 0.73 | 0.57 | 1.04 | 0.87 | 0.85 | 0.32 | 0.35 | 0.27 |
| 1G | 2.53 | 2.31 | 1.45 | 1.36 | 2.06 | 3.36 | 2.35 | 3.24 | 3.11 | 3.01 | 2.69 | 1.91 | 1.73 |
| 2A | 2.06 | 1.23 | 1.45 | 0.88 | 0.82 | 0.83 | 1.08 | 1.59 | 1.08 | 1.33 | 0.87 | 0.91 | 0.79 |
| 2B | 0.09 | 0.23 | 0.27 | 0.59 | 0.58 | 0.97 | 1.08 | 0.72 | 1.17 | 0.93 | 0.85 | 0.78 | 0.91 |
| 2C | 0.00 | 0.04 | 0.17 | 0.28 | 0.15 | 0.64 | 0.45 | 2.86 | 2.31 | 2.22 | 1.79 | 1.16 | 0.91 |
| 3A | 0.24 | 0.51 | 0.41 | 0.49 | 0.63 | 0.24 | 1.23 | 1.47 | 1.76 | 1.60 | 1.85 | 1.76 | 1.37 |
| 3B | 1.33 | 0.85 | 0.60 | 0.80 | 0.52 | 0.68 | 0.60 | 0.91 | 0.64 | 1.10 | 0.69 | 0.49 | 0.70 |
| 4A | 4.05 | 2.50 | 1.71 | 1.53 | 1.75 | 1.33 | 1.80 | 2.03 | 1.69 | 1.87 | 1.36 | 1.46 | 1.41 |
| 4B | 0.24 | 0.19 | 0.88 | 0.42 | 0.63 | 0.52 | 0.59 | 0.70 | 0.83 | 0.80 | 1.13 | 1.65 | 1.66 |
| 5A | 0.71 | 0.51 | 0.24 | 0.45 | 0.26 | 0.36 | 0.68 | 0.63 | 0.98 | 0.91 | 0.67 | 0.62 | 0.75 |
| 5B | 0.15 | 0.08 | 0.14 | 0.06 | 0.19 | 0.06 | 0.15 | 0.40 | 0.42 | 0.42 | 0.41 | 0.34 | 0.44 |
| 6A | 0.71 | 1.23 | 0.71 | 0.80 | 0.52 | 0.33 | 0.34 | 0.50 | 0.65 | 0.42 | 0.41 | 0.41 | 0.54 |
| 6B | 0.90 | 0.76 | 0.41 | 0.83 | 0.32 | 0.26 | 0.45 | 0.45 | 0.71 | 0.48 | 0.36 | 0.34 | 0.20 |
| 7 | 0.66 | 1.04 | 0.71 | 0.52 | 0.21 | 0.08 | 0.42 | 0.91 | 0.81 | 0.68 | 0.48 | 0.43 | 0.42 |
| 8 | 0.28 | 0.28 | 0.03 | 0.06 | 0.02 | 0.08 | 0.11 | 0.07 | 0.03 | 0.03 | 0.00 | 0.02 | 0.00 |
| 9 | 0.00 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL | 19.86 | 18.61 | 13.38 | 14.13 | 11.70 | 11.76 | 13.79 | 18.90 | 18.58 | 18.06 | 15.06 | 13.65 | 13.26 |

## Verb Problems

1A: Lack of agreement of subject and verb, third person singular (excluding all forms of the verb to be)

Example: He say he is going home.
The boy don't look happy.
We have to see it because he want to see it.
My mother look at television a lot.

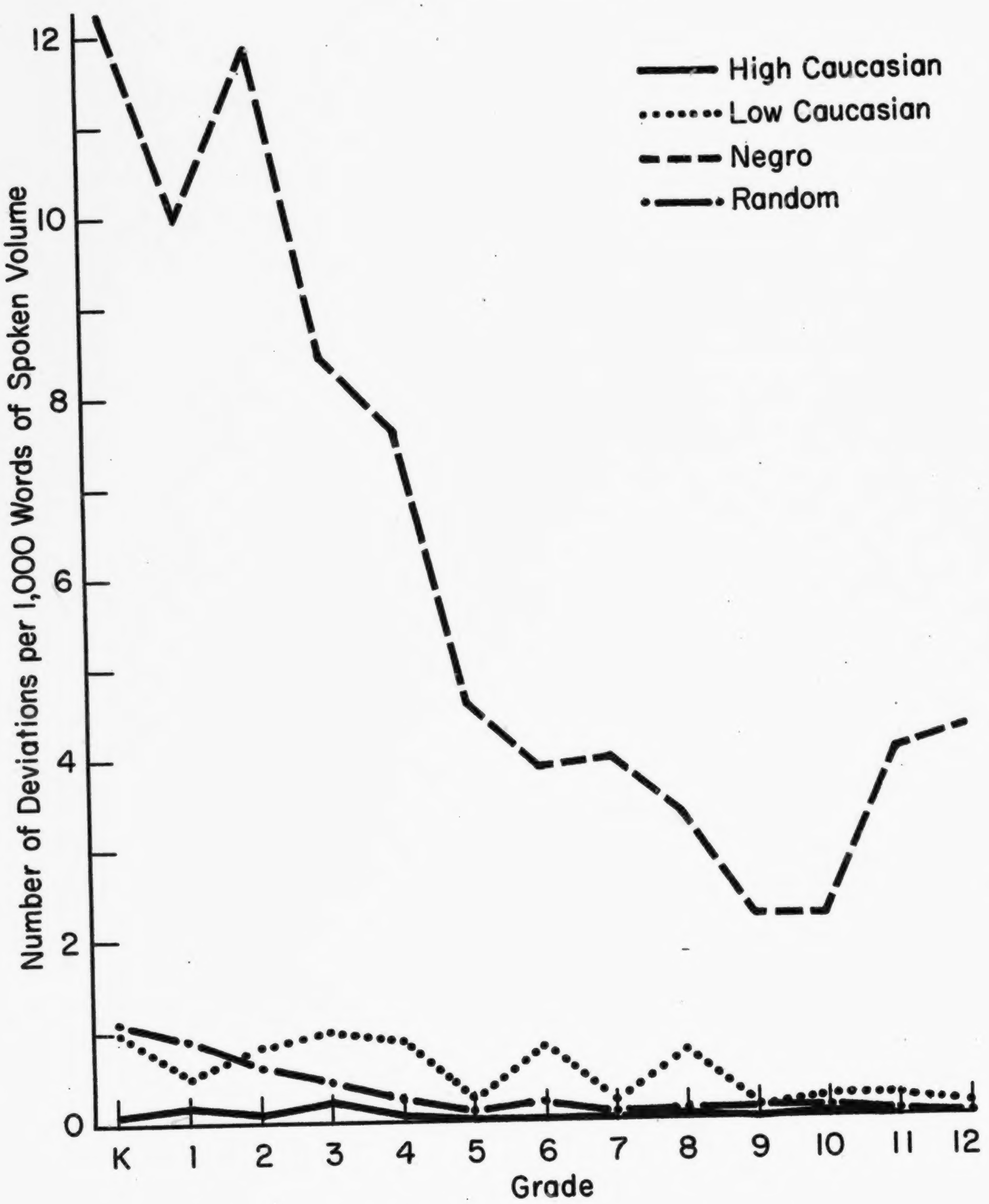
Comment: In English, verbs have a peculiar irregularity in that the third person singular adds an s in the present tense. For the Negro group, lack of agreement here is one of the most prevalent deviations from standard English usage--particularly in the earlier years of school. In the thirteen years of this study their change to standard English on this item is quite marked although in grades eleven and twelve the Negro group's incidence on this deviation shows an upward movement.

This increase in nonstandard usage in grades eleven and twelve may result from several different influences which would not be obvious except from a first-hand observation of the subjects. In some cases there seems to be a lapse into nonstandard usage resulting from a careless approach to language. In other cases the high school emphasis on literature and writing rather than on spoken language may result in a lack of reinforcement. And in still other cases, there is a tendency to use the dialect intentionally in order to preserve a cultural identification which often comes under attack in a Caucasian society.

From the standpoint of the other groups studied, the graphic presentation makes it obvious that this deviation is a minor problem for the Low Caucasian group, a lesser problem for the Random group, and a negligible problem for the High Caucasian group. The Low Caucasian group is most likely to have difficulty with the verb do. The Negro children often omit the s ending on verbs as in wants and looks in the above samples.

FIGURE 19

1A: LACK OF AGREEMENT OF SUBJECT AND VERB, THIRD PERSON SINGULAR --EXCLUDING ALL FORMS OF THE VERB TO BE



N = 21 for each selected group.
N = 50 for the Random group.

1B: Lack of agreement of subject and verb for all forms except the third person singular (again excluding all forms of the verb to be)

Example: They runs down the street.
The two little girls looks at the little boy.
She asks him while they walks home from the movie.
We likes to ride our bikes in the park.
I sees it.

Comment: The Negro child occasionally adds a superfluous s to verbs as in the examples given above. However, the incidence of this problem is virtually nonexistent for all four groups, and as a result no graphic presentation has been made. (See Tables 49, 50, 51, and 52.)

1C: Lack of agreement of subject and verb while using forms of the verb *to* *be*

Example: I *is* going outside.
We *is* the best ones.
I thought you *was* going to ask me that.

There *was* three girls.
Here *is* two dogs.

Comment: All four groups have difficulty with this problem during the early years of the study (kindergarten through grade three). By grade five the High Caucasian group and the Random group have brought the problem under control; and to a lesser degree the Low Caucasian group has also succeeded in reducing its incidence on this deviation. For the Negro group, however, the problem continues at a high level until grades eleven and twelve, and even then it is more of a problem for the Negro group than for any of the other groups studied.

One interesting feature of this deviation may be seen by examining the examples given above. *At all grade levels*, the problem for the High Caucasian group occurs mainly with expletives (the last two examples); and after grade five they have little problem even with this type of usage. For the Random group and the Low Caucasian group this same generalization holds true although to overcome their difficulties, both of these groups require more time than the High Caucasian group. For the Negro group, however, particularly in the early years, there is a problem with *all* of the examples shown.[1]

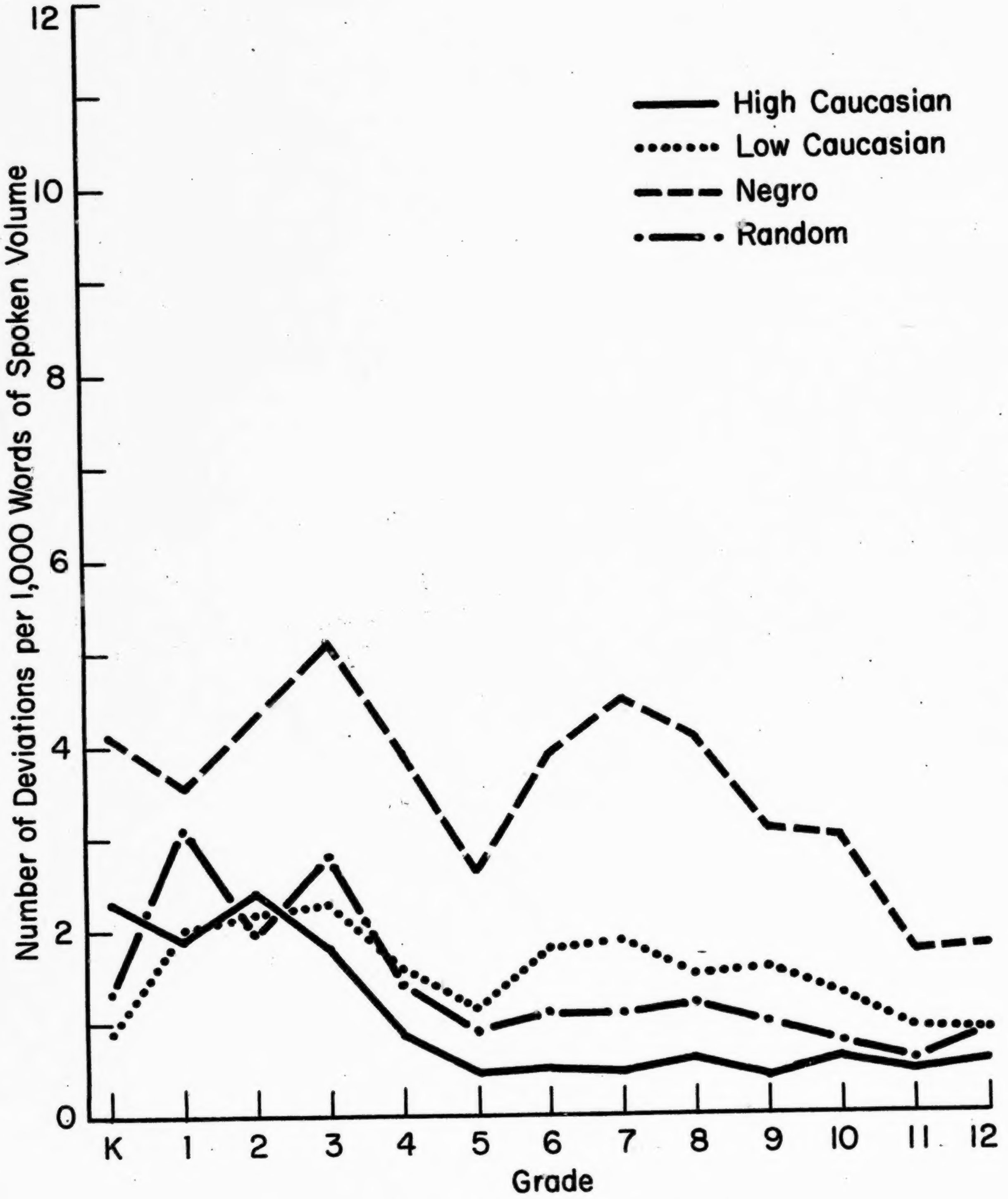
Also of interest--even though it may seem obvious--is that difficulties in this category are sometimes precipitated by the use of contractions. For example, in the later years of the study few subjects would say "There *is* two dogs on the lawn" whereas a larger number would say "There*'s* two dogs on the lawn."

---

[1] In connection with the Negro group it is worth noting that linguistic historians have long since pointed out that the singular *is* or *was* used with *all* persons is a speech pattern the first slaves could have learned from English colonists whose ancestors had used such forms as far back as the thirteenth century. See George Philip Krapp, "The English of the Negro," *American Mercury*, II (June 1924).

FIGURE 20

1C: LACK OF AGREEMENT OF SUBJECT AND VERB WHILE USING FORMS OF THE VERB TO BE



N = 21 for each selected group.
N = 50 for the Random group.

1D: Omission of the verb to be

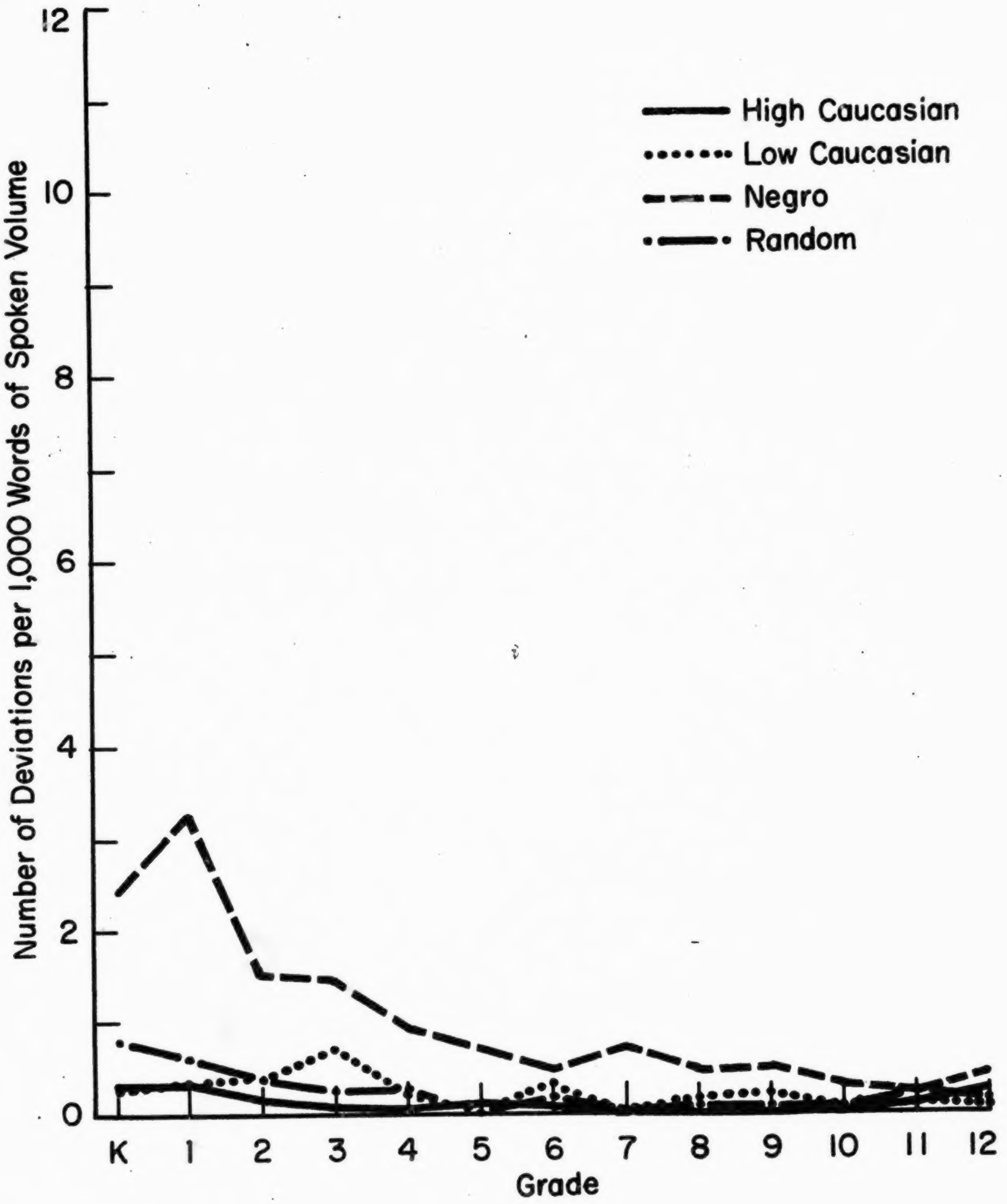
Example: He (is) happy.
That girl (is) my friend.
They (were) here to see us yesterday.
The reason I didn't go (was that) I didn't want to.
What had happened when they were traveling to the dog show (was that) Lad lost his favorite suitcase.

Comment: Omission of the verb to be as the main verb of a sentence is a minor problem for both Caucasian groups and for the Random group; for the Negro group, however, the problem is substantial in the early years and is then steadily brought under control.

As the subjects grow older, all groups show a change in the content in which omission of to be takes place. In the early years, for the Negro group, the deviation is illustrated by the first three examples above, whereas in the later years, for members of any group, the verb to be may be omitted in more complex situations like those in the last two examples above. In these last examples the problem is not a matter of usage but rather skillful organization of syntactical elements in order to achieve clear, smooth communication.

FIGURE 21

1D: OMISSION OF THE VERB TO BE



N = 21 for each selected group.
N = 50 for the Random group.

1E: Omission of auxiliary verbs

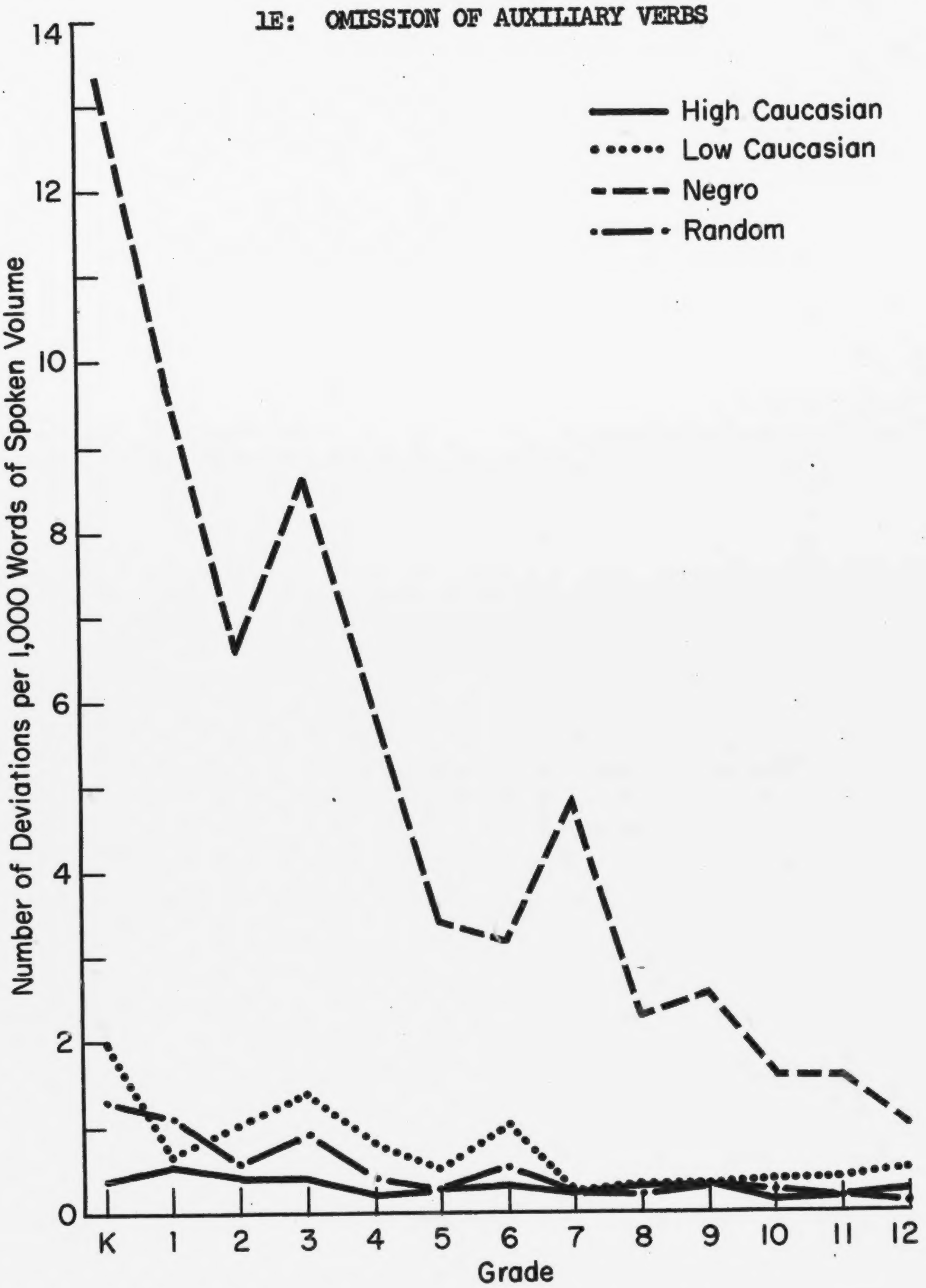
Example: He (is) running away.
He (has) been here.
She (will) be happy to hear the news.
I guess if he wanted to, he (could) do it.
They (have) been tormenting me all day.
How (do) you know he isn't here?

Comment: Omission of auxiliary verbs can best be described as follows: for the Negro group, an extreme problem steadily being brought under control over the thirteen- year period, for the Low Caucasian group, a minor problem in the early years; for the High Caucasian group, an insignificant problem for the entire period. Again, the Random group shows a mixed pattern, having a minor difficulty during the early years and then approaching the performance of the High Caucasian group (from grade four onward). This would be expected because Caucasians outnumber Negroes ten to one in the Random group.

Most of the difficulty for the Negro subjects centers on auxiliaries formed from the verb to be. This indicates that this category may be closely related to category 1D and should be viewed as additional evidence that handling the verb to be is a major problem for Negro children learning standard usage. As the next-to-the-last example above shows, the Negro dialect tends always to drop the first auxiliary.

FIGURE 22

1E: OMISSION OF AUXILIARY VERBS



N = 21 for each selected group.
N = 50 for the Random group.

1F: Nonstandard use of verb forms

Example: He has ate.
She ain't told him.
He don't be there much.
She bes my best friend.
I seen him yesterday.
They rided their bicycles to the store.
He had ran away before they got there.
I would've took him.

Comment: In this case, acceptable colloquial expressions with which some teachers might find fault--such as (1) was instead of were for supposition, (2) hadn't ought for shouldn't, (3) got for has or have--have been disregarded.

The Random group and both Caucasian groups have a continuing but relatively minor problem with nonstandard verb forms, whereas the Negro group encounters considerable difficulty from kindergarten through grade twelve and actually shows an increase for grades seven and eight. Once again the verb to be is occasionally a part of their trouble--as in ain't and "She bes my best friend."

An interesting aspect of this category: for Caucasian subjects during the early years the most frequent problem is the use of verb forms not actually existing in the English language, such as "He spreaded it" instead of "He spread it." (The child is logically assuming a regularity not true of English verbs.) In later years their main difficulty is with the standard use of the past participle, such as "He has ran" instead of "He has run," in the verbs.

Typically, English verbs decline as follows:

| | | |
|---|---|---|
| Present: | walk | thump |
| Past: | walked | thumped |
| Past Perfect: | have walked | have thumped |

However, many English verbs are irregular and do not follow the typical form of adding ed to the present tense to form the past tense. Quite naturally, English-speaking children experience confusion and have difficulty with these irregular verbs. This situation is not likely to change, and the problem will continue to persist for teachers. Fifty years ago, Charters' study established a basic list of American children's errors.[1]

---

[1] W. W. Charters, Minimum Essentials in Elementary Language and Grammar: A Second Report. Part I, Sixteenth Yearbook (Chicago, Illinois: National Society for the Study of Education, 1917).

Forty per cent of all the errors were located in fifteen common verbs, and almost all of these verbs were in confusion of the past tense with past participle. Those fifteen verbs were: *see*, *come*, *run*, *write*, *begin*, *break*, *drink*, *lie*, *do*, *go*, *give*, *take*, *ring*, *sing*, and *sit*. Table 53 from the present study presents the same problem with the fifteen Charters' verbs starred.

The verb difficulties Charters located fifty years ago still trouble children learning to speak standard English. The trouble with *lie* and *lay* has apparently increased over the years, very likely because the distinction between the two verbs is increasingly ignored by adult speakers. *Snuck* for *sneaked* appears to be making an attempt to establish its place in the language. *Fall*, *throw*, and *bring* appear to be more troublesome than they were in 1916. Otherwise the situation has changed little in fifty years. (Two verbs on the list--*sink* and *drown*--appear there because one of the stimulus pictures led to an unusually frequent use of those two verbs.)

For the Negro certain verbs are much more likely to be used in nonstandard forms: *lie*, *break*, *come*, *fall*, *go*, *run*, *see*, and *take*.

## TABLE 53

## NONSTANDARD USE OF VERB FORMS[1]

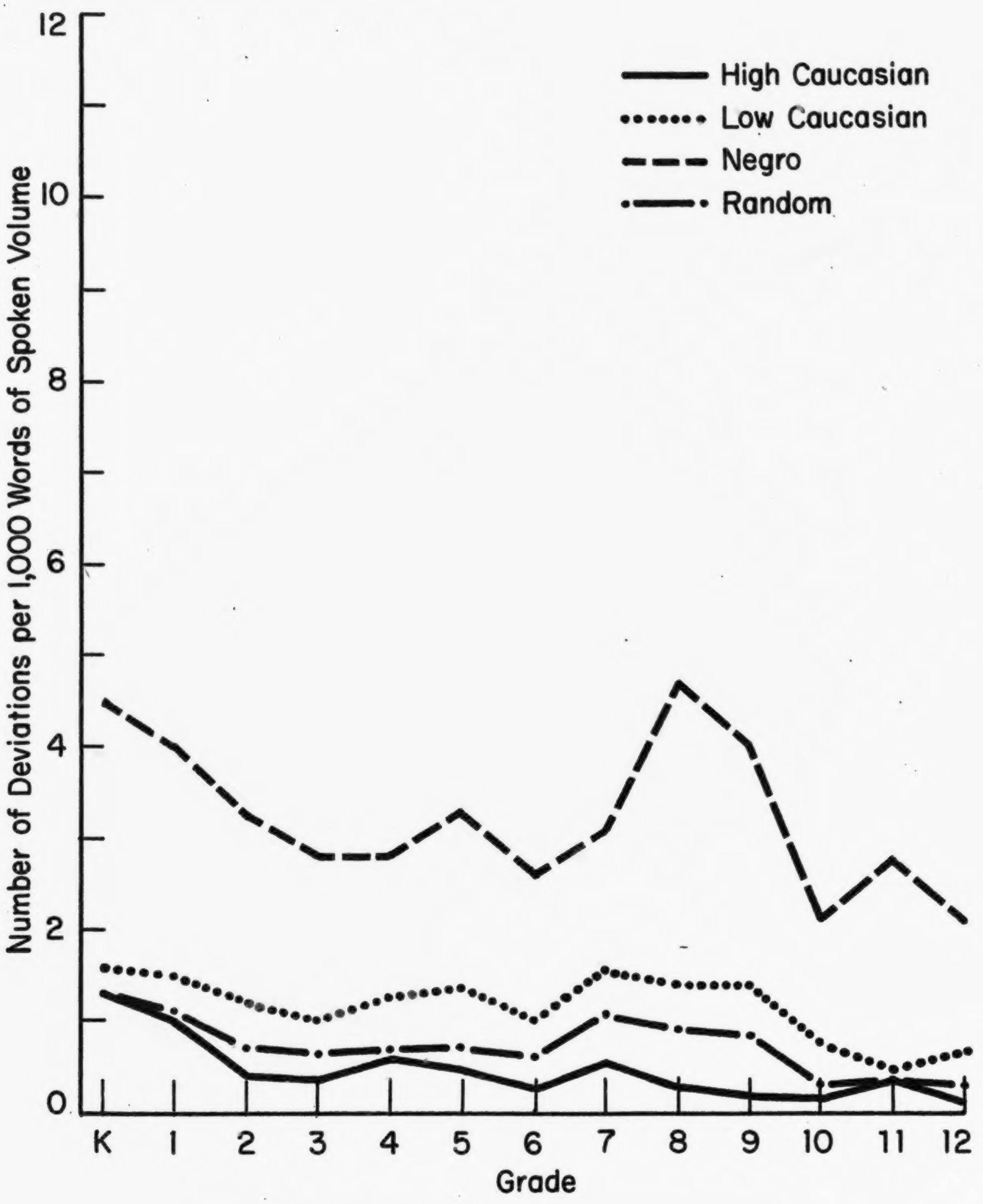
| Verb | Total Deviations[2] | Low (Negro) | Low (Caucasian) | Random | High (Caucasian) |
|---|---|---|---|---|---|
| *lie | 183 | 82 | 40 | 38 | 23 |
| *see | 77 | 57 | 7 | 9 | 4 |
| sink | 51 | 8 | 17 | 19 | 7 |
| *go | 42 | 29 | 3 | 9 | 1 |
| fall | 40 | 17 | 9 | 7 | 7 |
| *break | 39 | 26 | 4 | 4 | 5 |
| *come | 38 | 21 | 9 | 4 | 4 |
| sneak | 33 | 7 | 8 | 11 | 7 |
| *run | 29 | 16 | 4 | 4 | 5 |
| *take | 20 | 10 | 4 | 2 | 4 |
| drown | 18 | 10 | 6 | 2 | 0 |
| throw | 17 | 9 | 7 | 1 | 0 |
| *do | 16 | 7 | 5 | 4 | 0 |
| blow | 16 | 6 | 6 | 3 | 1 |
| bring | 15 | 8 | 4 | 3 | 0 |
| steal | 13 | 6 | 4 | 3 | 0 |
| tear | 11 | 8 | 3 | 0 | 0 |
| *give | 8 | 4 | 2 | 1 | 1 |
| *ring | 5 | 3 | 1 | 1 | 0 |
| *write | 5 | 3 | 0 | 1 | 1 |
| *sit | 2 | 2 | 0 | 0 | 0 |
| *drink | 2 | 1 | 0 | 1 | 0 |
| *begin | 1 | 1 | 0 | 0 | 0 |
| *sing | 0 | 0 | 0 | 0 | 0 |

[1] The starred verbs are those appearing on Charters' list of fifteen.

[2] The total deviations column is simply the summation of each individual group's nonstandard usage on the particular verb in question. For the verb lie, for example, 82 + 40 + 38 + 23 = 183. Note that this particular table is presented merely as a matter of interest for comparison to Charters' earlier findings on verbs. The numerical counts shown represent simple tallies for all years combined (kindergarten through grade nine). The only adjustment was made on the Random group to take into account the N of 50 for the Random group opposed to the N of 21 for the selected groups. Thus, the High Caucasian group's incidence on each verb deviation is probably overstated in relation to the other groups in that no downward adjustment was made to take into account the High Caucasian group's greater volume of spoken language.

FIGURE 23

1F: NONSTANDARD USE OF VERB FORMS



N = 21 for each selected group.
N = 50 for the Random group.

1G: Inconsistency in the use of tense

Example: I ate breakfast in the morning. I run to the store then to buy a comic book.
One time when I was sick, my mother comes in to see me.
She knew if she does something bad he would find out.
She draws on him, and the man shot her.

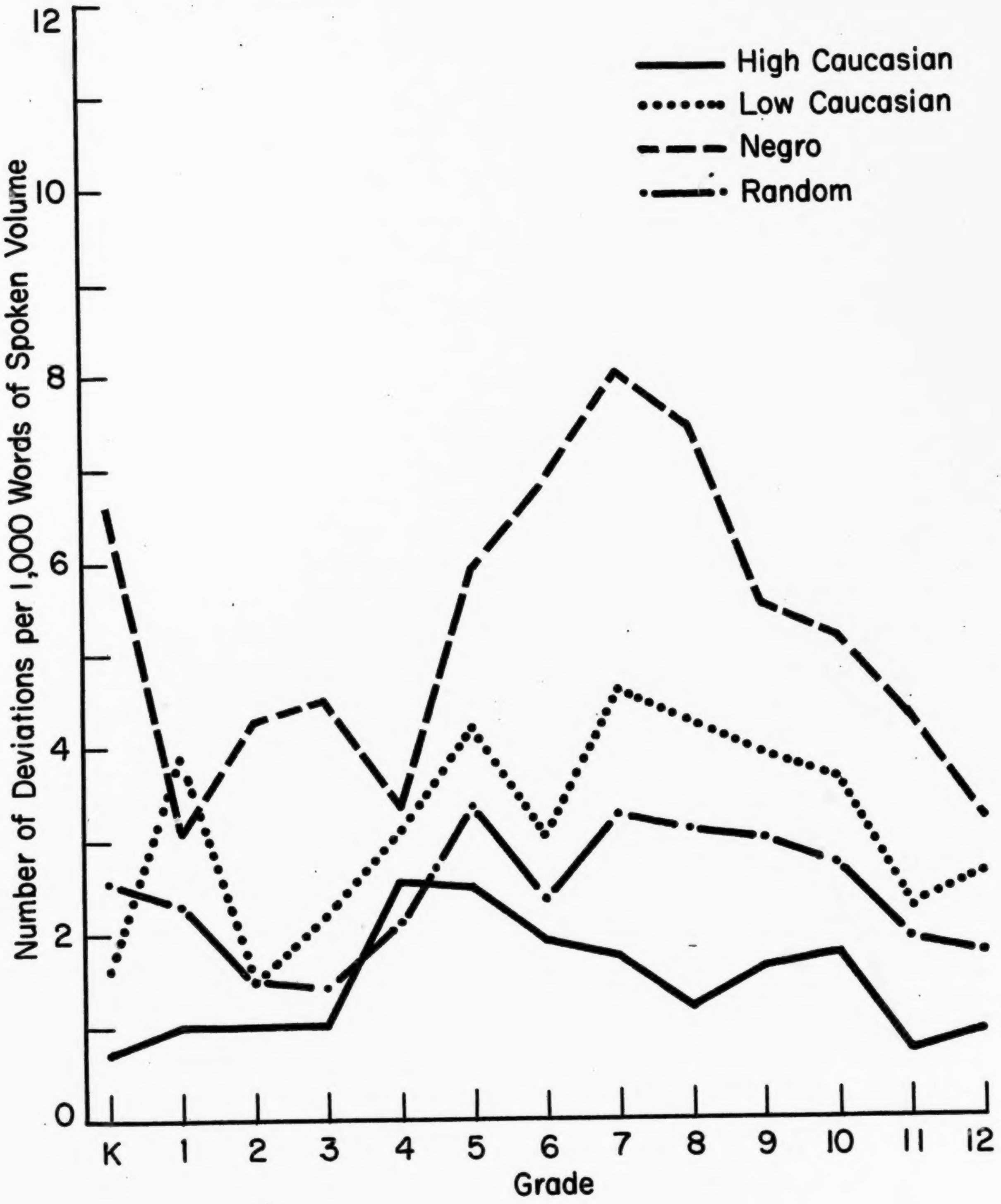
Comment: The Negro and Low Caucasian groups have an erratic and persistent problem with tense from kindergarten onward, a problem that increases until the seventh grade. In the early years they have difficulty with simple expressions such as the last three examples above. Beginning in grade four, their difficulties are centered in more complex sequences of tense. Switching back and forth between present and past tense in long passages of uninterrupted speech (giving a long description of the pictures used in the interview or a lengthy explanation of a book they have read) is especially noticeable. The Random group typically falls between the High Caucasian and Low Caucasian groups.

For the High Caucasian group the language behavior on this matter is quite different. In the early years this group experiences very little difficulty with simple tense sequences. In grades four and five, they show an abrupt increase in this problem, mainly as a result of early experimentation with complex tense structures. After grade five the problem seems to be coming under control although they still have some tense inconsistencies from sentence-to-sentence and show a minor increase in grades nine and ten. As in several other categories in the study this group, initially more proficient with language, meets the problem somewhat earlier than the less proficient subjects and makes headway in solving the problem a year or so earlier than the other groups.

Unlike the earlier six categories which are clearly problems of usage, this matter of maintaining consistency of tense is not a problem of usage (habit) but a deeper problem--remembering to be consistent, to be clear and unambiguous. This is a thinking skill, a rhetorical skill, deeply tied to awareness of clear communication.

FIGURE 24

1G: INCONSISTENCY IN THE USE OF TENSE



N = 21 for each selected group.
N = 50 for the Random group.

## Pronoun Problems

2A: Nonstandard use of pronouncs

Example: *Her* went to town.
My sister and *them* went with me.
*They* eyes are blue.
I have one of *them* hoops.
The witch was kind to Laura and *I*.
He did it by *hisself*.

Comment: In the kindergarten the Negro group has a significant problem, most often illustrated by the use of the objective case in a situation where the nominative case is required as illustrated by the first two examples above. In addition, the Negro group has a kindergarten problem of confusion of sex of the pronoun as related to the antecedent. Other research has shown that most children have this problem somewhat earlier.[1] Limitations of language practice in culturally disadvantaged groups may retard subjects, regardless of race.

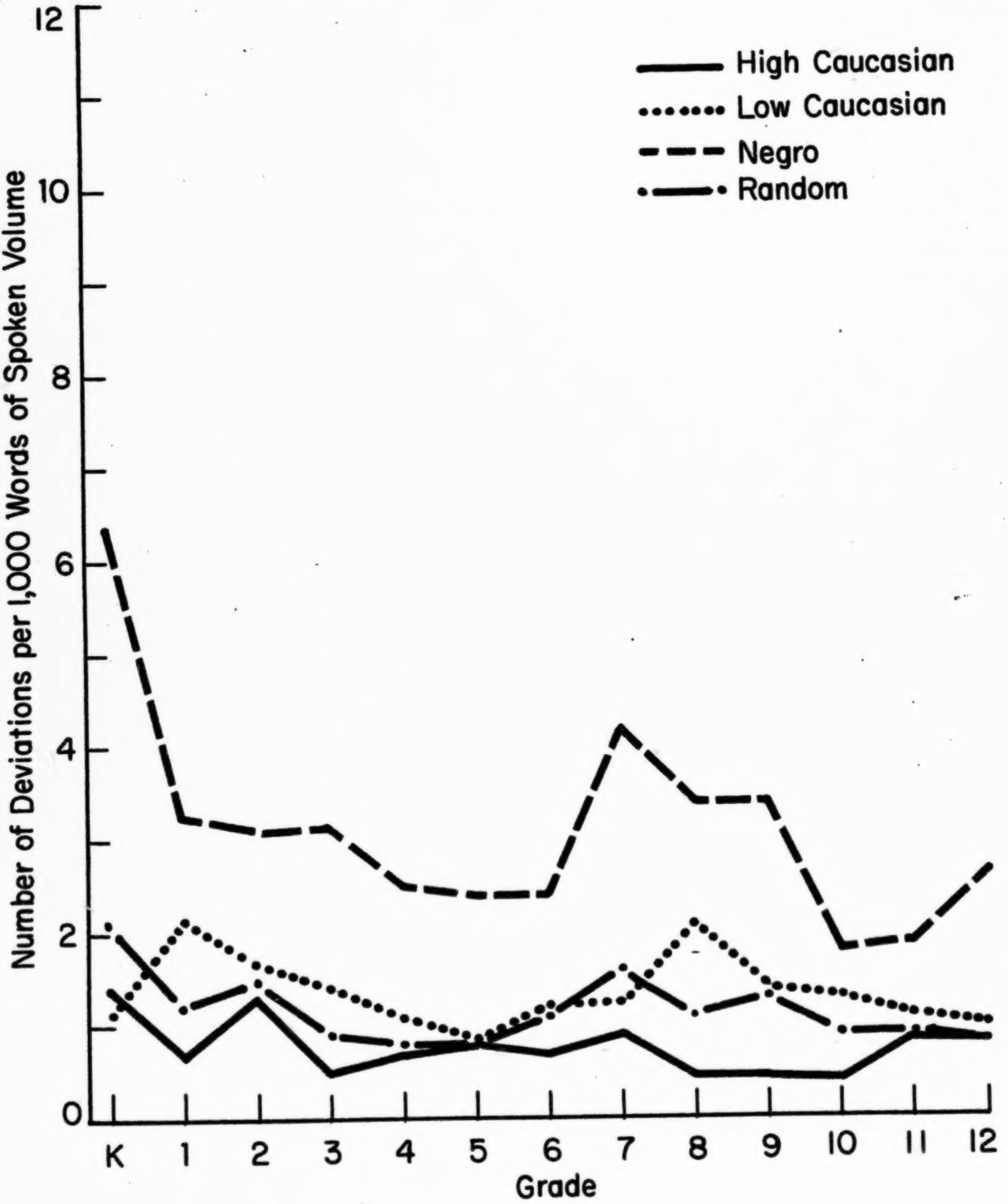
Nonstandard use of pronouns, then, is a persistent problem for all groups, with the Negro group having the most difficulty, the High Caucasian group the least. However, there is a notable change in the content of this deviation as the subjects grow older. Whereas they were once troubled by "*Her* went to town," they now confuse case usage as in the example "He gave it to Mary and *I*," a usage perhaps induced by the belief that *I* is more elegant than *me*, a result of purist instruction or nonschool concern over "It is *I*."

---

[1] Correct use of pronouns before the age of two is rare. Between two and six, most children are busy straightening out the pronoun. See A. Gesell, *The First Five Years of Life* (London: Metheun, 1941), p. 199, and A. F. Watts, *The Language and Mental Development of Children* (Boston: D. C. Heath, 1948), pp. 40-41 and 45.

FIGURE 25

2A: NONSTANDARD USE OF PRONOUNS



N = 21 for each selected group.
N = 50 for the Random group.

2B: Use of that instead of who as a relative pronoun referring to persons

Example: I saw the man that I knew.
There goes the girl that is running away.

Comment: In her study of current American usage, Bryant concludes, "That usually refers to 'thing' antecedents but it may refer as well to 'person' antecedents."[1] She notes, however, that ninety per cent of the instances she collected were "thing" antecedents. In any case, this problem is relatively slight in the present study and shows an erratic pattern for all four groups. It is interesting to note, however, that from kindergarten through grade nine, the Negro group has the lowest incidence of this deviation. This apparently results from the Negro group's use of fewer relative clauses than the Random group or either of the Caucasian groups, and this evidence joins with the fact that the Negro group consistently has a lower average number of words per communication unit than either of the Caucasian groups. (See Table 46 which was presented earlier.

Bernstein's work among British Cockneys,[2] as well as the socio-economic findings of the present research, indicate that low socio-economic groups, regardless of race, do not elaborate sentences as much as do middle and upper socio-economic groups. Low socio-economic groups do not seem to use language as often to express subjective feeling, to analyze or synthesize concepts, or to consider relationships. As a result they use fewer subordinate clauses, appositives, infinitives, and phrases of all kinds.

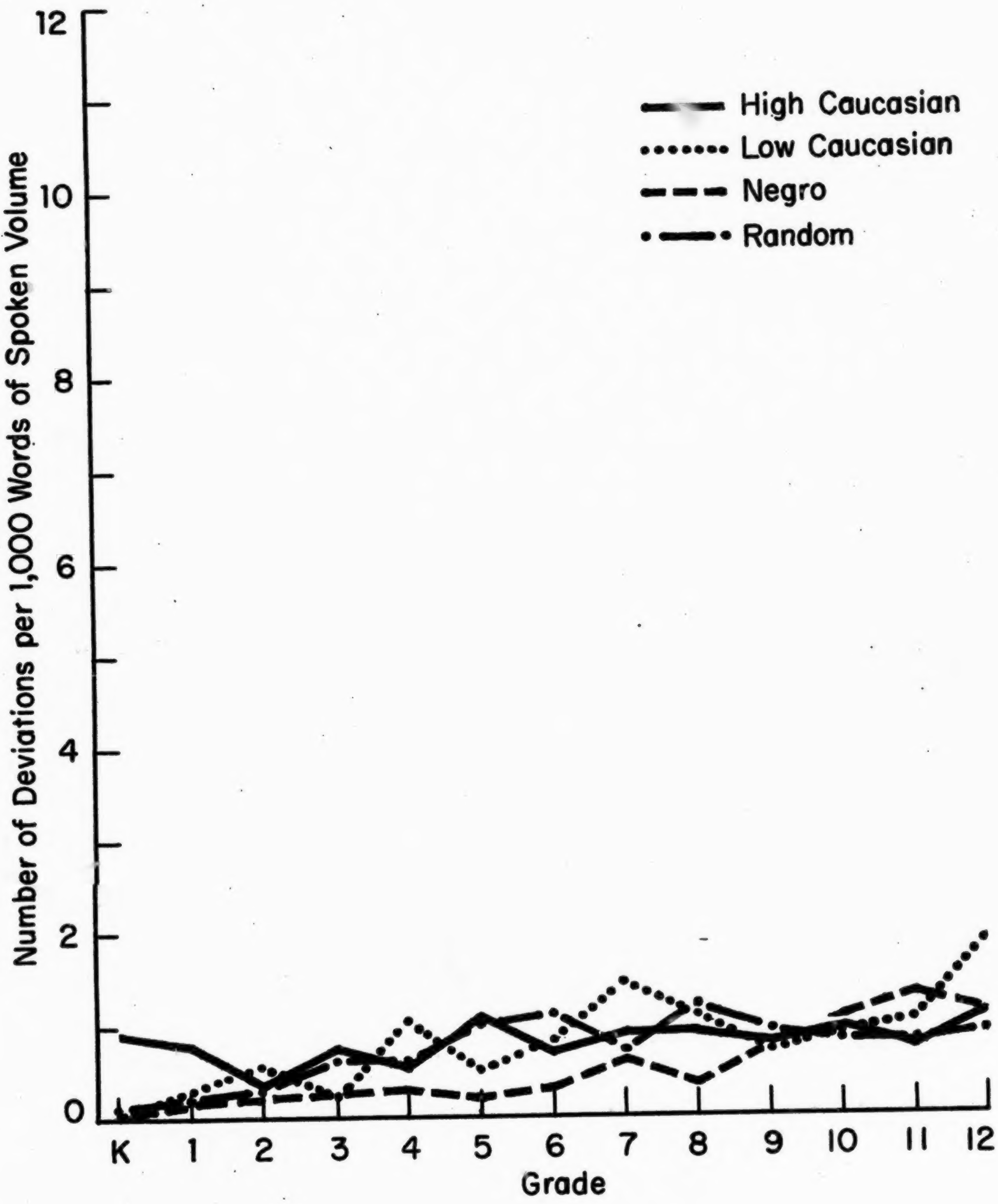
---

[1] Margaret M. Bryant, Current American Usage (New York: Funk and Wagnalls, 1962), pp. 174-176.

[2] Basil Bernstein, "Language and Social Class," British Journal of Sociology, XI (London: Routledge and Kegan Paul Ltd., pp. 271-276.

FIGURE 26

2B: USE OF THAT INSTEAD OF WHO AS A RELATIVE PRONOUN REFERRING TO PERSONS



N = 21 for each selected group.
N - 50 for the Random group.

### 2C: Confusing use of pronouns

Example: *They* thought *they* were waving at *them* when *they* rode by *them*.
So Pinky went over to *her* house, and *she* helped *her*.
Every time *she'd* do something, *she* would turn *her* head.

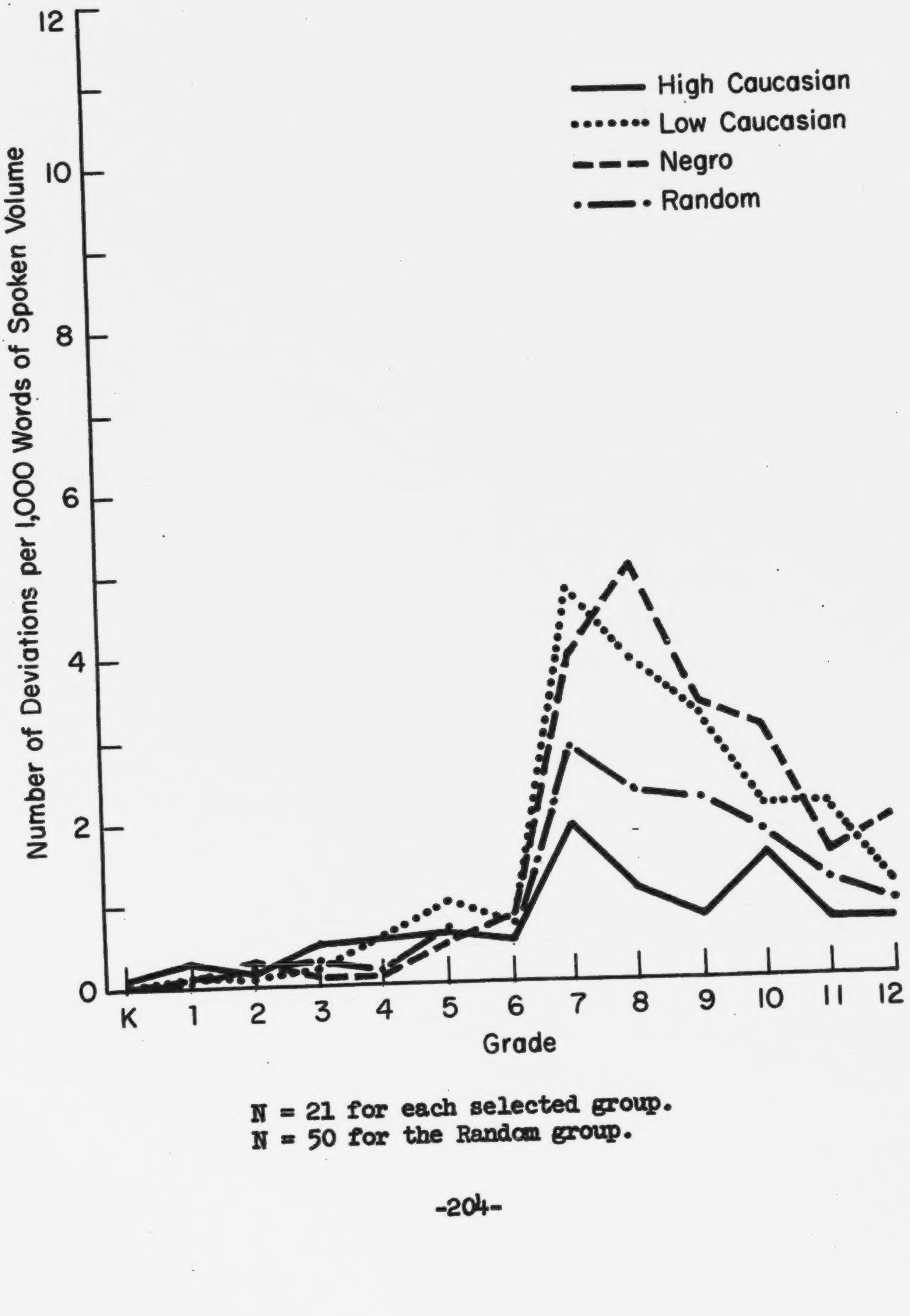
Comment: During the early years of the study, the confusing use of pronouns is virtually no problem for any group. However, the problem begins to grow in grades five and six, and all groups show an abrupt increase in grade seven. In grades eight and nine difficulties with this deviation continue at a high level--although once each group reaches a peak (grades seven and eight), there is a steady tendency to bring this problem under control. Notable is the fact that the Negro group and the Low Caucasian group have approximately the same degree of difficulty with this deviation. This is apparent from the way the lines in the graphic presentation cross back and forth at several different grade levels.

For all groups the difficulty in grades seven through twelve is a failure to make precise distinctions in more complicated content, typified by the three examples above. Subjects use the same pronoun to refer to several people in a story being told. Such ambiguity with pronouns is a common language behavior for all speakers, even adults, and in the context of the situation is often not a serious problem. In this research, with the presence of the pictures to which the child was referring, the context usually made the pronouns fairly clear. However, in long accounts about books the subjects had read, pronoun reference was not always clear, especially when the reference was to some antecedent in a previous sentence rather than in the same sentence.

In the case of reference of pronouns to antecedents, the analyst gave, wherever possible, benefit of doubt and accepted the importance of context. Thus the results here are, if anything, underplayed rather than exaggerated. In summary, then, we may note that a confusing use of pronouns emerges as subjects develop the use of longer, more complex expressions. This problem is not a matter of language habits but rather a matter of sensitivity to the listener's needs. Freedom from ambiguity in pronouns and clear reference of all kinds require a speaker who is sensitive to the needs of his listener. Thus the problem we have encountered here moves beyond usage to the jurisdiction of rhetoric, imagination, and clear, precise communication.

FIGURE 27

2C: CONFUSING USE OF PRONOUNS



N = 21 for each selected group.
N = 50 for the Random group.

## Syntactic Confusion

3A. Ambiguous placement of a word, phrase, or clause

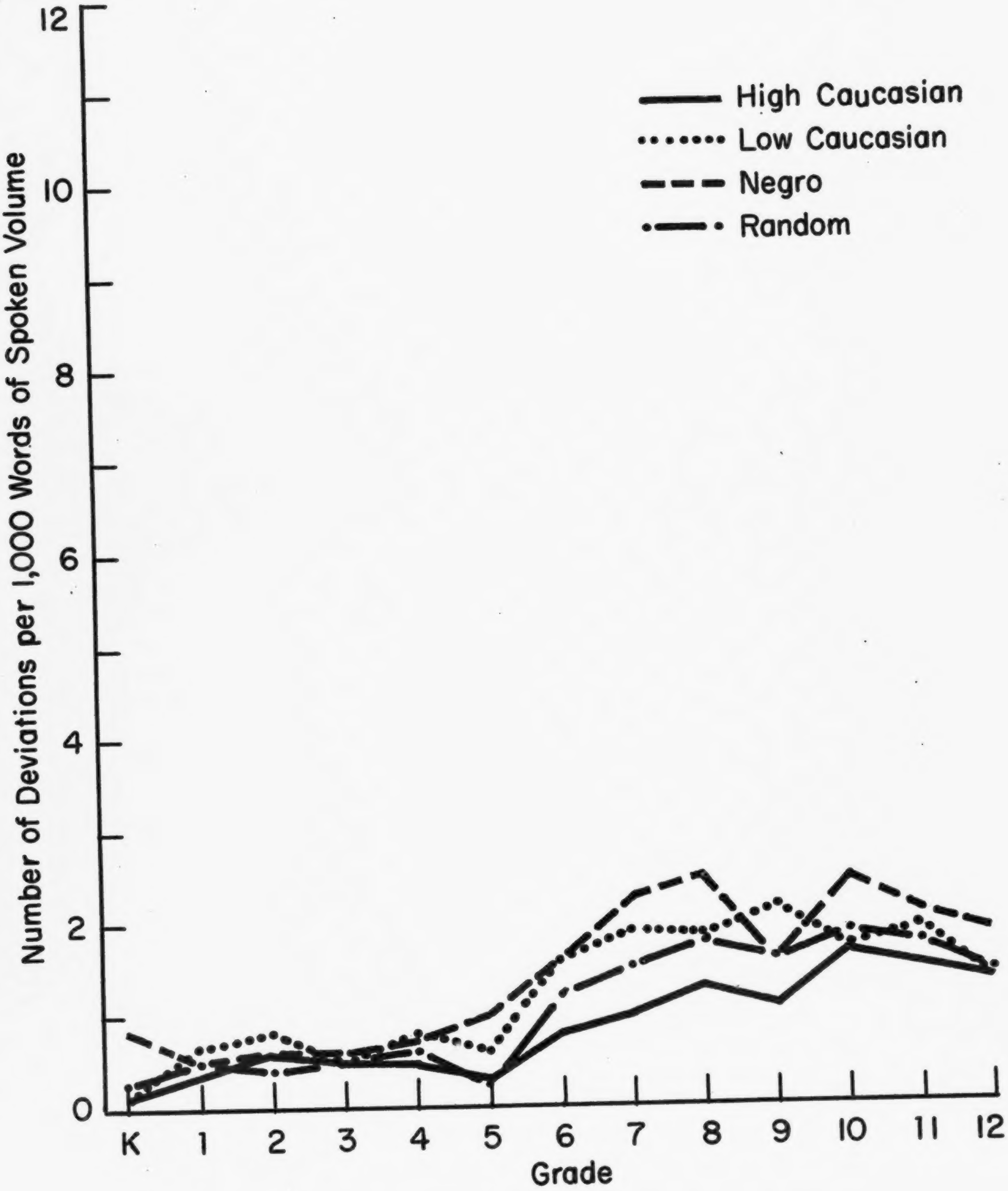
Example: The man is blowing a horn with a hat on.
The curtains were hanging up and shades.
Lloyd we have to see it because he likes to see it.
I only saw one boy.

Comment: This was a minor problem for all four groups until grade six. At that point, and continuing from grade seven through grade twelve, all groups experienced more difficulty. This appears to be the result of an increase in complexity of sentence structure as the subjects grow older--more complexity offers more probability of misplaced sentence elements. An interesting aspect of this problem is that the High Caucasian group shows less difficulty than the other groups in spite of the fact that the High Caucasian group uses more grammatical complexity and has a higher average number of words per communication unit.

Once again, this proves to be something other than usage. Misplacement of structural elements, such as occur in this category, is a matter of coherent thought and imaginative sensitivity to the problems of one's listener. A high degree of mental agility and awareness of the pitfalls of communication seem to be necessary requirements for reducing this kind of language roughness.

FIGURE 28

3A: AMBIGUOUS PLACEMENT OF A WORD, PHRASE, OR CLAUSE



N = 21 for each selected group.
N = 50 for the Random group.

3B: Awkward arrangement or incoherence

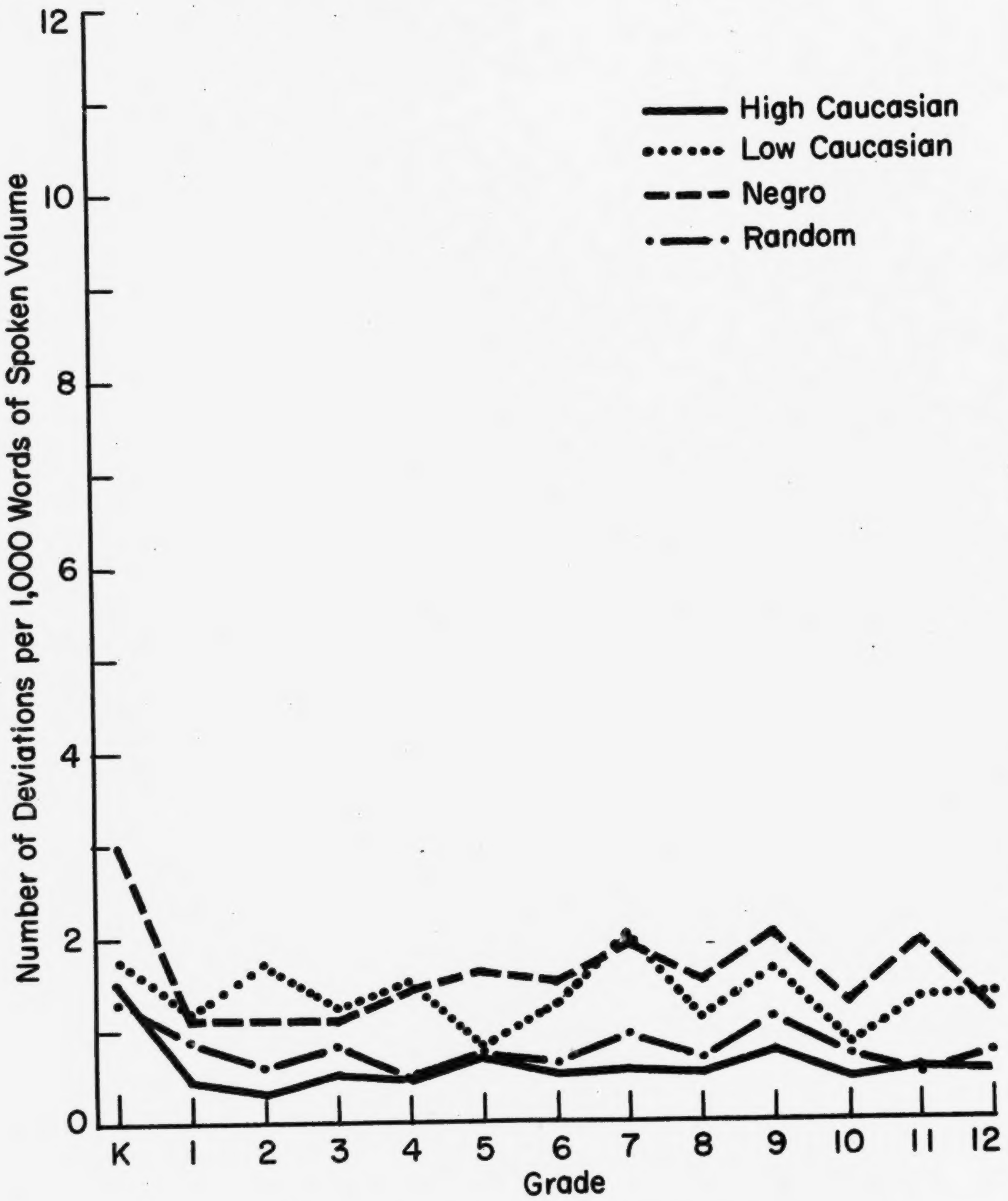
Example: A couple of weeks is school out.
You make a circle with everybody go in.
He signals to all the pitchers in these games which he'd hit and win.

Comment: This is an insignificant problem for both the High Caucasian group and the Random group. The Negro group has some problem in kindergarten but then reduces the problem to about the same level as the Low Caucasian group. Actually, this category is so similar to the previous one--ambiguous placement of a word, phrase, or clause--that they might well be combined. The main difference is that the difficulties classified here are those of a general pervasive vagueness or incoherence whereas those of the previous category are specific examples of misplaced elements.

The problem is deeper than usage, and successful improvement undoubtedly acquires experience in conveying meaning in situations where imprecision of language impairs important communication so drastically that thoughts must be rephrased. There is some indication that the problem increases as the pupils enter adolescence and use more complex language structure.

FIGURE 29

3B: AWKWARD ARRANGEMENT OR INCOHERENCE



N = 21 for each selected group.
N = 50 for the Random group.

4A: Omission (except of auxiliary verbs)

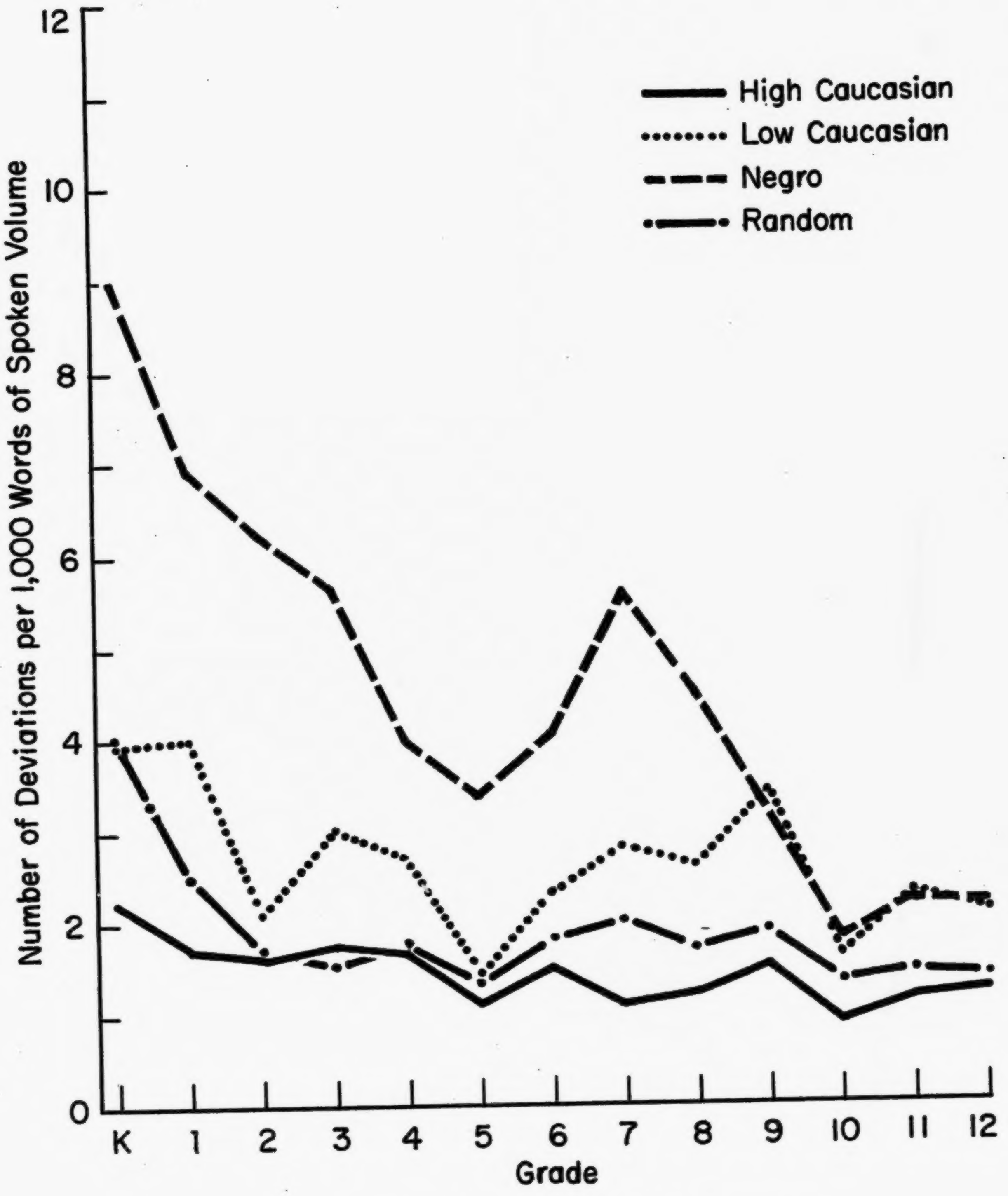
Example: He slipped (out of) the house with his violin.
He was waiting (for) his mother and father.

Comment: From kindergarten through grade five the Negro group has substantial difficulty with omissions but slowly brings the problem under control. In grades six and seven, however, the trend reverses, and it is not until grade nine that they reduce the incidence of this deviation to their fifth grade level. Still, once a peak has been reached in grade seven, the Negro group shows steady improvement, and in grades nine, ten, eleven, and twelve they are able to achieve the same level of control as the Low Caucasian group.

This same pattern of bringing omissions under increasing control until grade five and then experiencing a sharp upward fluctuation that continues through grade nine is also exhibited by the Low Caucasian group. And to a lesser degree the Random group shows the same general tendency. The results in this category may also be contaminated by poor articulation and pronunciation.

FIGURE 30

4A: OMISSION--EXCEPT OF AUXILIARY VERBS



N = 21 for each selected group.
N = 50 for the Random group.

4B: Unnecessary repetition

Example: I go you know to buy ice cream you know at the store.
And he told me to take it very often he said.
They had on hats and different clothes on.
Well this George he was well kind of shy.
He got proof that again his swing was good again.

Comment: It should be noted that repetitions of the subject, such as "Jim he went out" or "The little girl she got a bunny," were not counted. In this research these are considered acceptable statements of the sentence topic; in adult speech they emerge as frequent and fairly acceptable oral usage, e.g., "That man who brings our newspaper every morning, well, he's not my ideal example of promptness."

The incidence of deviations in this category indicates an erratic pattern for all four groups. Before grade nine all groups have relatively little difficulty (except for a seventh grade peak by the Negro group), but in grades ten, eleven, and twelve the problem is obviously more prevalent.

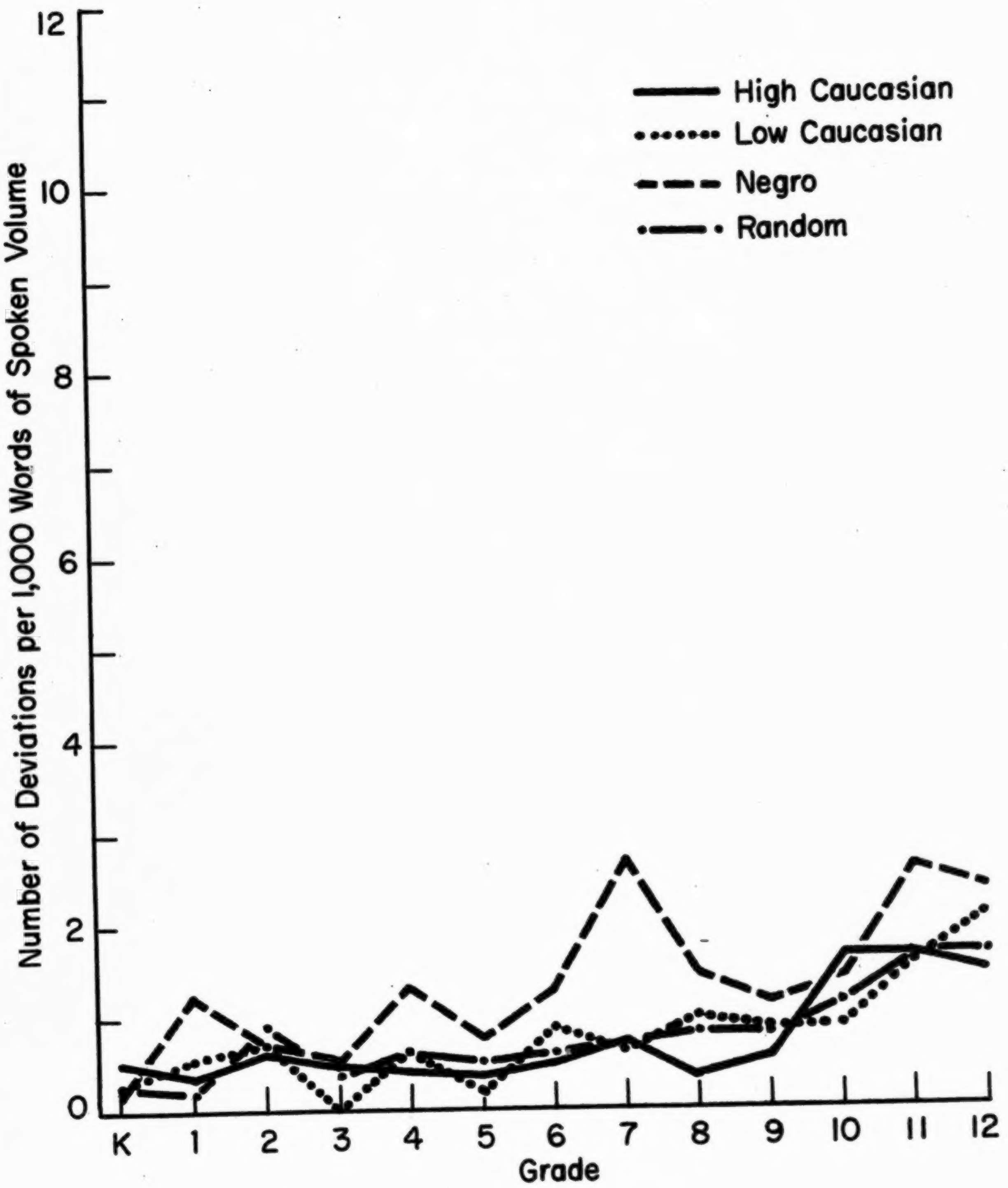
The abrupt increase by the Negro group in grade seven, and the increase by all groups in grades ten, eleven, and twelve, is accounted for almost exclusively by two expressions: "Well" and "you know."

The "you know" phrase appears to be a junior high school phenomenon among many subjects; and this phrase together with using "well" unnecessarily follows a number of subjects into high school. Actually the worst offender with repetitious "you know" phrases was a boy in the Low Caucasian group. In the eighth grade he used this phrase unnecessarily a total of 64 times. In other words, he actually said you know over 128 times in a transcript of 1,314 words.

The use of such phrases may very well be the response to linguistic inadequacy by persons who recognize the need to communicate better but lack the skills to do so. Whatever the reason, the problem is not one of usage but of judgment and skill in communication. It may very well be closely related to social and psychological security as well as to language proficiency.

FIGURE 31

4B: UNNECESSARY REPETITION



N = 21 for each selected group.
N = 50 for the Random group.

## Other Problems

5A: Nonstandard connection (prepositions)

Example: Listen at (to) him.
We drove to (from) Utah to Texas.
Bud went back at (to) his home.

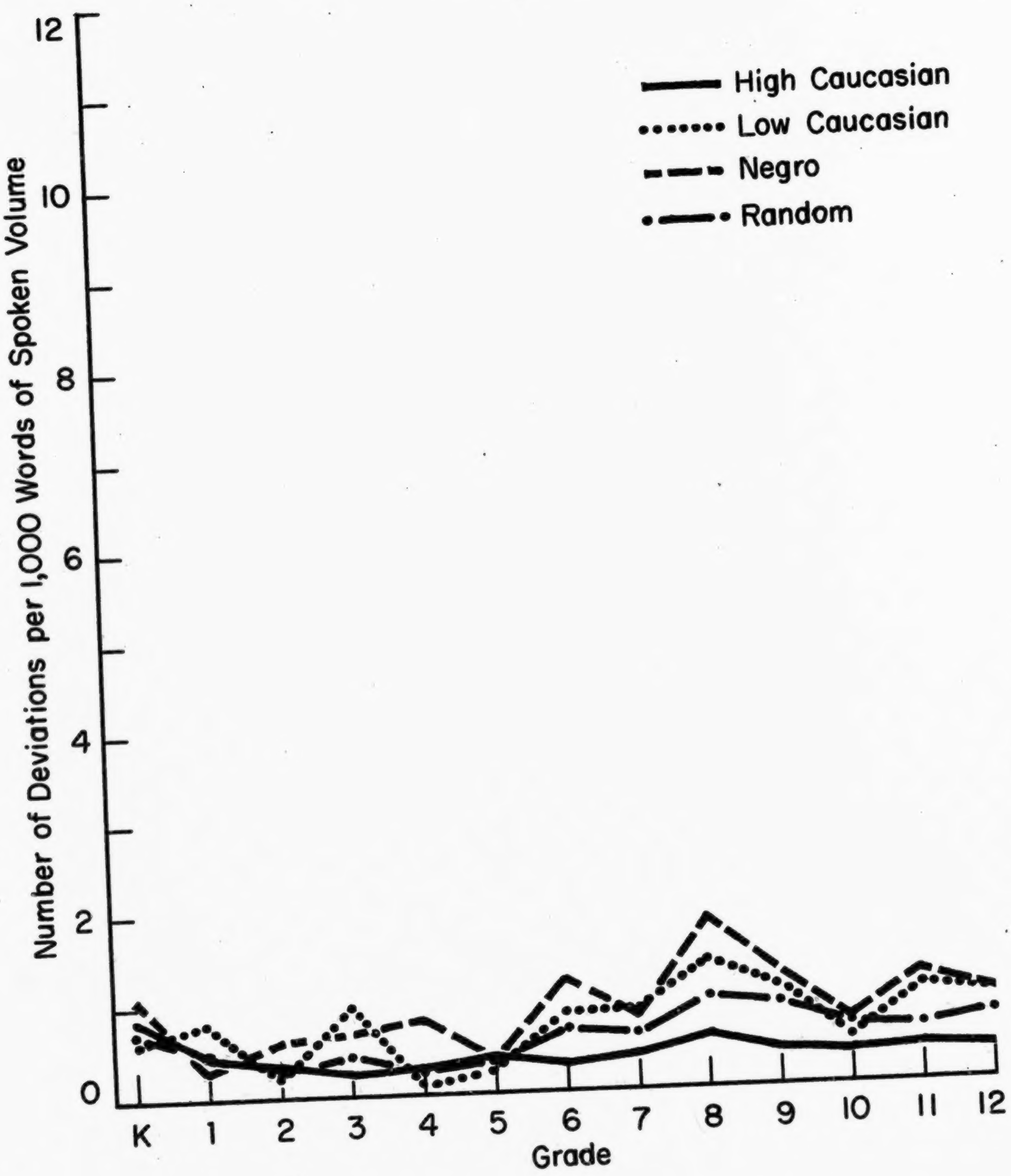
Comment: This category shows an erratic pattern and is quite minor for all four groups from kindergarten through grade five. For the two low groups after grade five there is a slight upward trend which seems to be a result of using a higher average number of words per unit--thereby using more prepositional phrases and increasing the probability of a deviation. It is certainly not an important problem for any of these subjects. Following Bryant, we have classified "different than as standard usage.[1]

---

[1] Bryant, op. cit., pp. 69-70.

FIGURE 32

5A: NONSTANDARD CONNECTION (PREPOSITIONS)



N = 21 for each selected group.
N = 50 for the Random group.

### 5B: Nonstandard connection (conjunctions)

Example: He went in the room *when* (where) she was.
I wish *if* (that) I don't die or anything.
She wanted to go to the party, *but* (and) so she went.

Comment: This deviation is insignificant for all four groups and therefore has *not been presented graphically*. It should be noted, however, that the lack of substantial incidence on this deviation results mainly from rarity of usage; i.e., subjects in this research seldom use conjunctions other than *and* and *but* in their oral language.[1]

---

[1] The precise incidence of this deviation may be found in Tables 49, 50, 51, and 52.

6A: Nonstandard modification (adjectival)

Example: He saw _a_ airplane.
That girl is _more pretty_ than the other one.
I would like to play with the _youngest_ of those two girls.
He went home because he felt _badly_.

Comment: Problems with adjectives are relatively minor for all groups although it is of interest to note that the Negro group has approximately the same degree of difficulty in grade twelve that it begins with in kindergarten. For the Negro group this is mainly a problem with the use of _a_ and _an_.

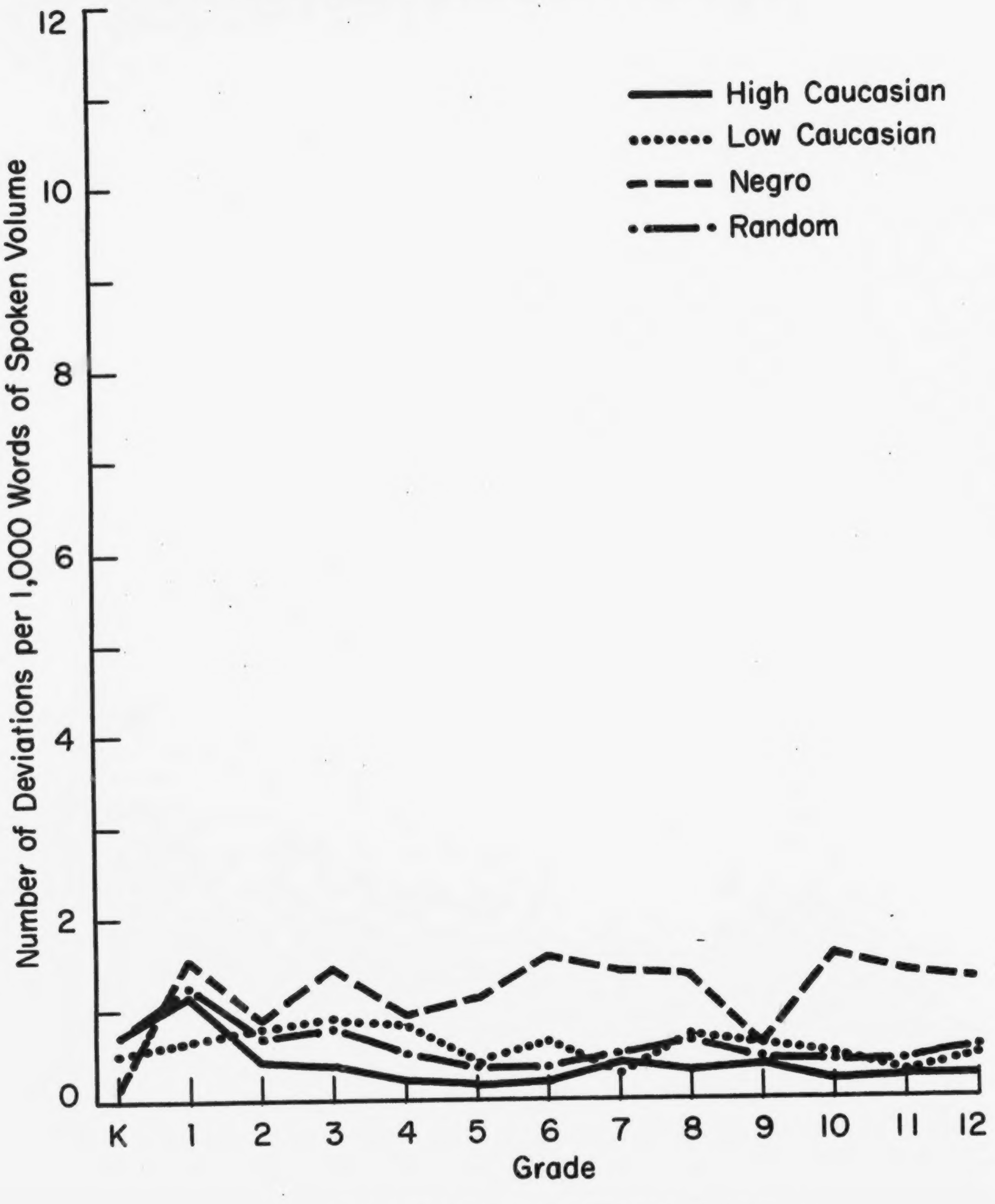
Bryant and others consider the use of the superlative rather than the comparative for comparison between two items to be a fact of standard English usage. Bryant finds usage about equally divided on "felt _bad_" and "felt _badly_."[1]

---

[1] Bryant, _op. cit._, pp. 35-36.

FIGURE 33

6A: NONSTANDARD MODIFICATION (ADJECTIVAL)



N = 21 for each selected group.
N = 50 for the Random group.

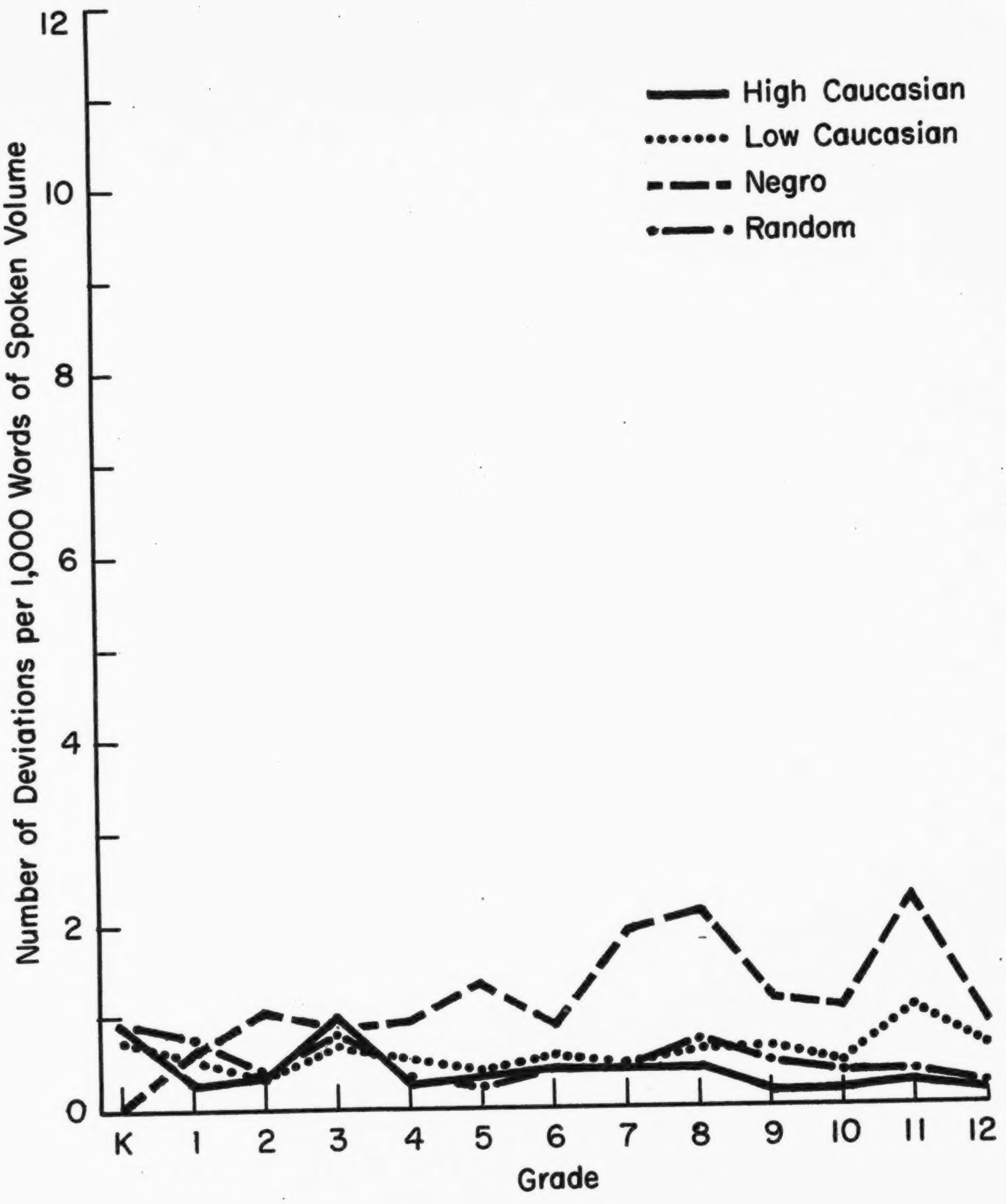
### 6B: Nonstandard modification (adverbial)

Example: This girl knew that man very much.
I guess he arrived quick.
That lady treated her cruel.
I can swim good enough.

Comment: This is a relatively minor problem for the Random group as well as for both Caucasian groups. For the Negro group the problem is not serious. However, during the later years (grade four and onward) the members of the Negro group have a steady and persistent problem whereas all other groups bring this deviation under control. The main difficulty encountered by the Negro group is the omission of the s at the end of the word sometimes.

FIGURE 34

6B: NONSTANDARD MODIFICATION (ADVERBIAL)



N = 21 for each selected group.
N = 50 for the Random group.

7. Nonstandard use of noun forms

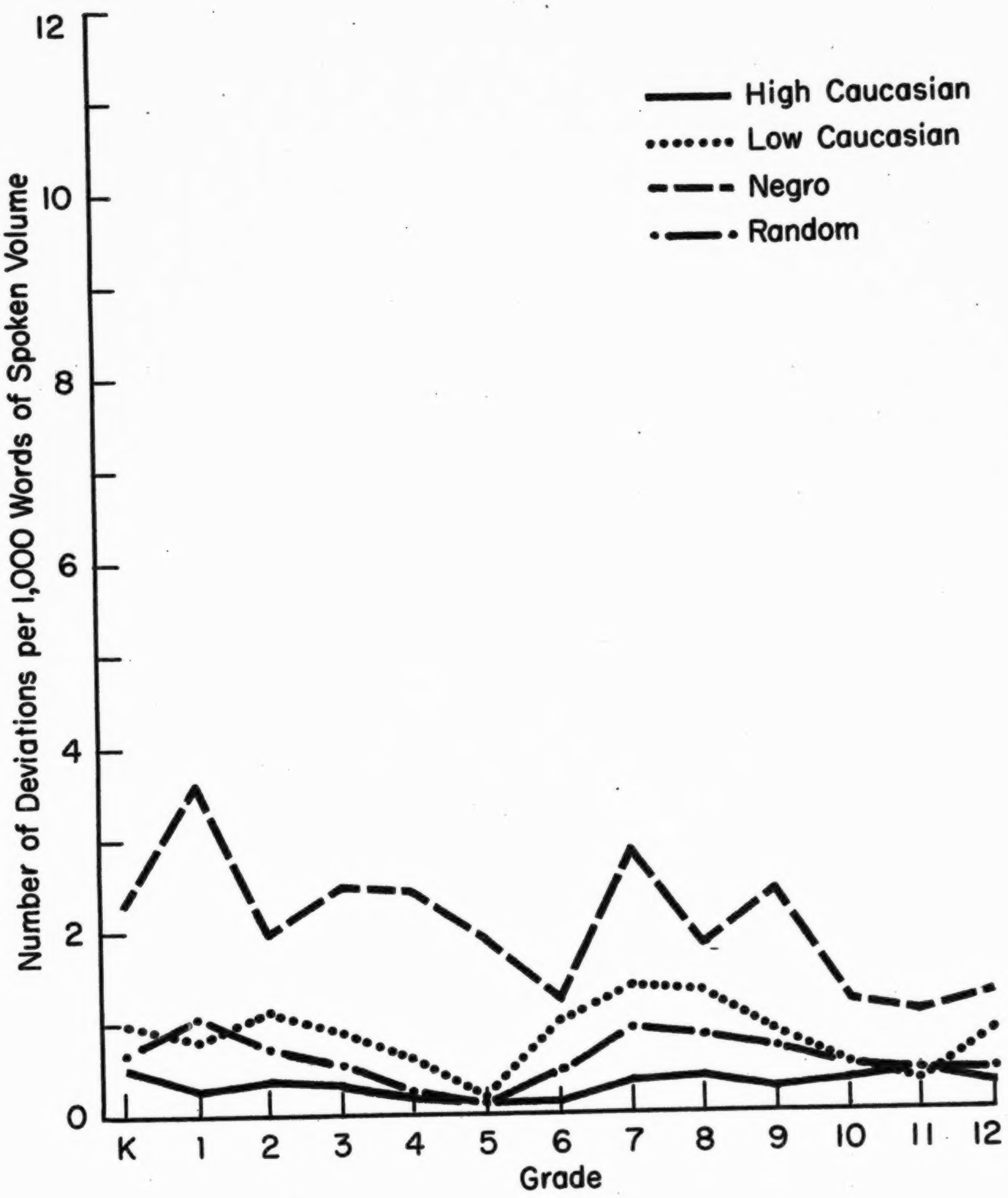
Example: I see two mans.
The people are all wearing masses (masks).
The movie was a western about the calvary (cavalry).
The sharps (sharks) are jumping out of the water.
That little girl is holding a mice.

Comment: The High Caucasian group never has any difficulty with nouns. The Low Caucasian group and the Random group show little difficulty but exhibit an upward trend after grade five which is again brought under control in grades nine through twelve. The Negro group shows a more persistent problem from kindergarten through grade nine.

In later years (after grade five) all groups exhibit a different problem from that encountered in earlier years. They succeed in conquering such simple words as men rather than mans, but they increase their difficulties with more complicated words. For example, they will say calvary when they mean cavalry or masses when they mean masks. These difficulties, of course, vary considerably for each subject and seem to indicate that the subject is extending his vocabulary without having the more difficult nouns clearly in his grasp. They may also be due to difficulties of pronunciation; sks in masks is not easy to pronounce. It is possible to view this category as one of vocabulary inaccuracy rather than one of standard usage. It often appears to be a hopeful sign of attempted vocabulary enlargement not quite under precise control. Probably all learners go through this stage.

FIGURE 35

7: NONSTANDARD USE OF NOUN FORMS



N = 21 for each selected group.
N = 50 for the Random group.

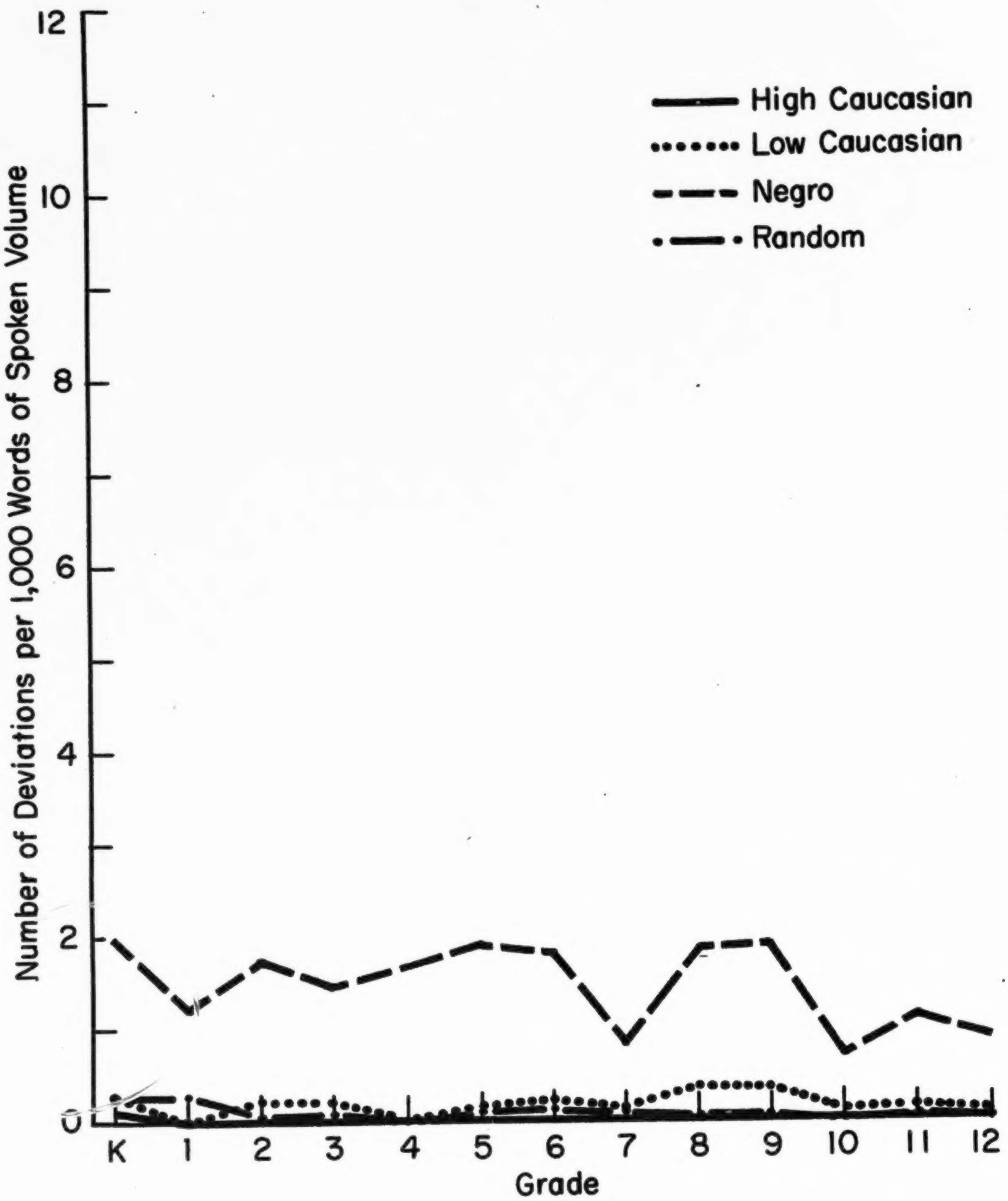
8. Double negatives

Example: I don't know nothing about that.
We don't have no books at our house.
There wasn't nobody coming to visit him.

Comment: The Random group and both Caucasian groups have almost no difficulty whatever with double negatives. The Negro group, however, has a persistent problem with all examples illustrated, and this problem continues at about the same level from kindergarten through grade nine. In grades ten, eleven, and twelve the Negro group brings this problem under more control.

## FIGURE 36

## 8: DOUBLE NEGATIVES



N = 21 for each selected group.
N = 50 for the Random group.

9. Nonstandard use of possessives

Example: That is the girl hand.
They're bandaging a dog leg.
We ride in my mother car.

Comment: The incidence for this deviation is virtually nil for all four groups and as a result it has not been presented graphically. The adjusted means on this deviation may be found in Tables 49, 50, 51, and 52.

## Total Deviations

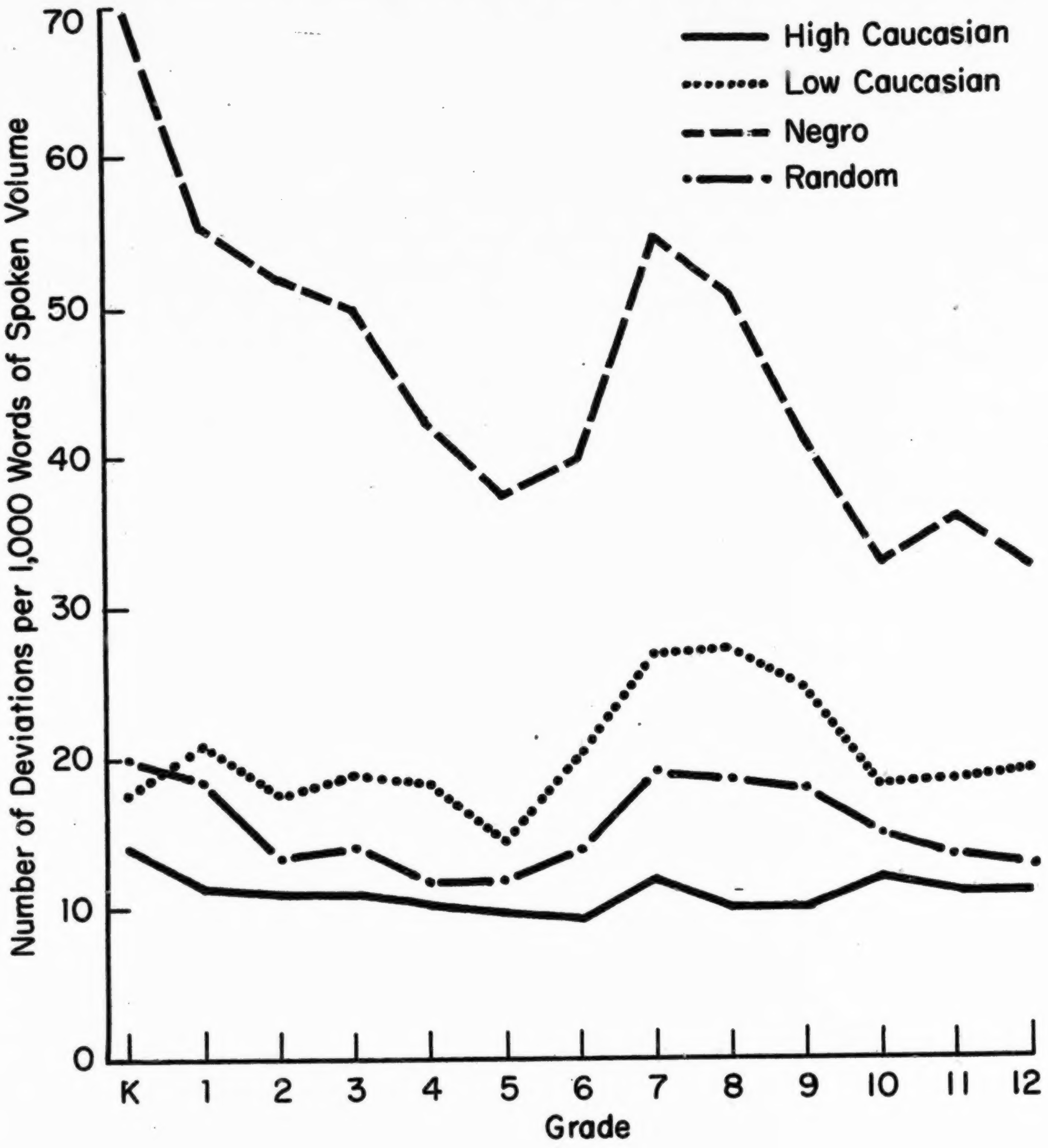
In the foregoing examination of the subjects' problems in using standard spoken English, we have purposely avoided combining the categories. However, now that each category has been studied separately, our next question is whether or not anything may be gained by examining the totality of deviations from the prestige dialect.

A summation of all the separate categories, most of which have been shown on individual graphs, is presented in Figure 37. As can be seen, the Negro group shows steady improvement through grade five but then abruptly increases its difficulties, not achieving the fifth grade level again until grade nine. This same pattern of an abrupt upward movement after grade five is also found in the Low Caucasian group and the Random group although not to the degree to which it occurs in the Negro group. On the other hand, the total deviations curve for the High Caucasian group is *almost a straight line from kindergarten through grade twelve*.

For the Random group as well as for both Low groups, the dip in the curves followed by an abrupt upward trend in the total number of deviations (in grades six through nine) indicates that as complexity of sentence structure and total volume of spoken language increase *simultaneously*, there is a *more than proportional* probability of difficulty with certain problems--problems of clarity and precision, not problems of habitual usage. In other words, it is not logical to assume that the Random group and both Low groups suddenly grow more inept in the use of language after grade five and then regain their abilities in grades ten, eleven, and twelve. Rather, the findings point to the fact that only those of exceptional language ability (the High group) are capable of maintaining control over their deviations while *simultaneously* increasing the volume and complexity of their spoken language.

FIGURE 37

TOTAL NUMBER OF DEVIATIONS PER 1,000 WORDS OF SPOKEN VOLUME



N = 21 for each selected group.
N = 50 for the Random group.

## Total Deviations Apart from Social Class Dialect Problems

Certain departures from the prestige dialect, departures that are obviously a tremendous problem for the Negro group, represent a minor problem for the Random group and for both Caucasian groups.[1] Specifically, these are the categories concerned with (1) agreement of the subject and verb in the third person singular, (2) omission of the verb to be, (3) omission of auxiliary verbs, (4) nonstandard use of verb forms, and (5) double negatives. Figure 38 shows the result in total deviations when these five categories are subtracted on a year-by-year basis for all four groups.

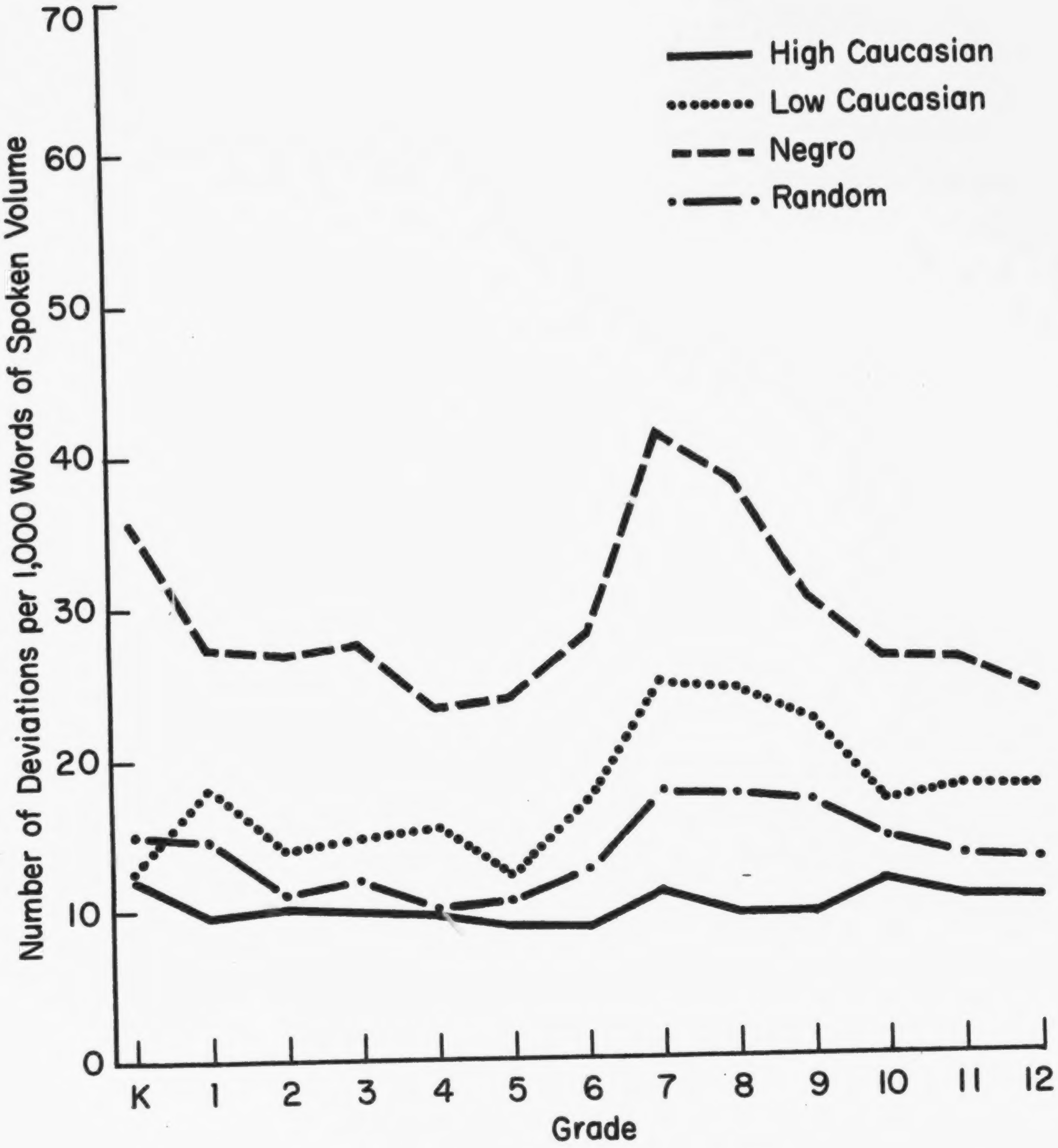
Comparing Figure 37 to Figure 38 makes it obvious that the Low Caucasian group performs better than the Negro group in either case (with dialect categories retained or with dialect categories subtracted). However, the magnitude of difference between the two graphs is very great. When deviations which are primarily cultural are subtracted, all four groups move much closer together. In other words, the Negro group seems to be expending much of its energy in overcoming problems the Caucasian subjects never encounter.

---

[1] As indicated previously, Caucasians outnumber Negroes in the Random group by a ten-to-one ratio.

FIGURE 38

TOTAL NUMBER OF DEVIATIONS PER 1,000 WORDS OF SPOKEN VOLUME WITH DEVIATIONS OF ETHNIC ORIGIN (1A, 1D, 1E, 1F, 8) SUBTRACTED



N = 21 for each selected group.
N = 50 for the Random group.

## Summary and Conclusions

This special study of deviations from standard English usage has been an examination of the nonstandard speech of four groups of subjects during the thirteen-year period of their schooling (kindergarten through grade twelve). All four groups were drawn from a larger universe of children, i.e., from the total sample in the over-all study which in turn is made up of a stratified sample of subjects chosen on the bases of sex, ethnic group, socio-economic status, and spread of intellectual ability. Three groups, Caucasian (High language ability), Caucasian (Low language ability), and Negro (Low language ability), were selected on the basis of a cumulative average of teachers' ratings. The fourth group, the Random group, was selected on an equal-probability basis, i.e., through use of a table of random numbers.

In all, a total of twenty-one categories of nonstandard oral usage were counted, using a system of adjusted mean averages to make each group and each year directly comparable to any other. In addition data have been presented on total deviations and on total deviations with those of ethnic origin subtracted. From the foregoing analyses, then, what are the major conclusions which may be drawn?[1]

Our first conclusion is that members of the Negro group encounter gigantic problems in attempting to acquire the prestige dialect. In thirteen years of schooling they make enormous improvement in subject-verb agreement and in using auxiliaries, less improvement in using the verb to be appropriately or in standardizing the verb forms. These subjects--primarily from economically and culturally disadvantaged homes--obviously expend much of their energy in overcoming problems Caucasian subjects never encounter.

Our second conclusion is that those subjects not handicapped by social class dialect (the majority of Caucasians) have their greatest problems in categories related to clarity of expression rather than habitual usage. The difficulties encountered by these subjects (High Caucasian, Low Caucasian, and Random) occur in five categories in the following order of frequency:

---

[1] A more detailed series of conclusions may be found in Walter Loban, Problems in Oral English (Champaign, Illinois: National Council of Teachers of English, 1966), pp. 47-57.

- inconsistency in the use of tense
- careless omission of words (excluding omission of auxiliaries)
- lack of syntactic clarity
  - ambiguous placement of words, phrases and clauses
  - awkward and incoherent arrangements of expression
- confusing use of pronouns
- trouble with agreement of subject and verb when using there is, there are, there was, and there were

Obviously, each of these five problems transcends usage. Rather, they are matters of sensitivity to clarity and precision of communication. Without exception, for Caucasian subjects the incidence on categories concerned with habitual usage adheres to the horizontal line representing zero.

Lastly, the summation of all deviations (Total Deviations--Figure 37) points up the fact that only those of exceptional language ability (the High Caucasian group) are able to maintain their control over deviations from standard English while simultaneously increasing the volume and complexity of their spoken language.

# PART X: SUMMARY AND CONCLUSIONS ON THE LONGITUDINAL STUDY OF CHILDREN'S LANGUAGE[1]

## Background and Purpose

The research reported in the foregoing sections of this monograph deals with a thirteen-year longitudinal study of language used by a stratified sample of 338 subjects during the entire course of their schooling (kindergarten through grade twelve). The study is concerned specifically with the use and control of language, the rates of growth exhibited by the subjects during the course of the investigation, the effectiveness of their communication, and the relationships among their abilities in speaking, reading, writing, and listening. The major questions forming the purposes and dimensions of the investigation were the following:

. . . Just as in physical development, are there predictable stages of growth in language?

. . . Can definite sequences in language development be identified?

. . . How do children vary in ability with language and gain proficiency in using it?

## Design

Stratification of the sample was not tied to a single variable. Precautions were taken to avoid any unique or unusual factors of selection. But at the same time a stringent effort was made to ensure representativeness on the bases of sex, racial background, socio-economic status, and spread of intellectual ability. The four characteristics decided upon--sex, race, socio-economic status, and spread of intellectual ability--were chosen as the bases of selection inasmuch as previous studies of children's language had identified one or more of these four variables as having a primary influence on language proficiency.

---

[1] According to the instructions of the Office of Education, this section of the monograph has been included "for the benefit of those who do not have time to read the entire text." As a consequence, the material contained herein will seem repetitious to those who have read the entire monograph.

The research design makes use of special subgroups selected from the total sample. The two subgroups most frequently used are a group high in language ability and a group low in language ability. These have been chosen on the basis of a thirteen-year cumulative average of teachers' ratings of the subjects' language ability and are used to contrast those subjects at the extremes of language ability to those subjects in the total sample.[1]

## The Data Collected

For each subject in the study an effort was made to obtain as comprehensive a record as possible, not only on his linguistic growth and behavior but also on other variables which might have a bearing on the ways in which he learned to speak, read, write, and listen to the English language. Among the data being studied are the following:

---

[1] The reader should also note that three decisions are reflected in the statistical presentation:

a. Subjects on whom there were less than four consecutive years of data (kindergarten through grade three) have been eliminated. This has reduced the Total group of subjects from 338 to 263.

b. The High and Low groups have been re-selected on the basis of a thirteen-year cumulative average of teachers' ratings. In addition, the reliability of the High and Low groups has been markedly increased by raising the N for each group to 35. Thus, when comparisons are made between the two groups, the identical 35 High subjects will be compared to the identical 35 Low subjects for each given year from kindergarten through grade twelve.

c. A Central group of subjects (a group which includes all subjects except those classified as either High or Low) has been shown separately on a number of occasions.

Also included in the research design are socio-economic comparisons on most measures of relative language proficiency. These comparisons use the seven-point Minnesota Scale of Paternal Occupations as the basis for dividing the subjects into socio-economic groups (I = highest; VII = lowest).

### Oral Interviews

In the spring of every year, each subject remaining in the study was interviewed individually with his responses recorded on either a tape recorder or a similar recording device. In any given year the interviews were identical for all subjects; the format of the interviews was altered periodically during the course of the project to take into account the advancing age of the subjects.

### Typed Transcripts

A group of highly trained typists have accurately transcribed the oral interviews according to a detailed set of instructions.

### Written Compositions

Beginning in grade three, annual samples of written language ability were secured for all subjects remaining in the study.

### Reading Tests

Test scores on either the Stanford or California tests of reading achievement were accumulated from grade four through grade nine; these scores were converted to the number of years and months a given subject reads above or below his chronological age.

### I.Q. Tests

As part of the data-gathering process, all I.Q. scores were obtained for every subject in the study.

### Listening Tests

In grades eight and nine and again in grades eleven and twelve, the STEP Test of Listening Ability was administered to the majority of subjects in the study.

### Tests on the Use of Subordinating Connectives

Beginning in grade five and continuing through grade twelve a test of the ability to use subordinating connectives was administered to every subject remaining in the study.

### Teachers' Ratings

In every year of the study each subject's teacher rated him on a specified series of language factors, with each factor scored on a five-point scale. Inasmuch as a cumulative average of teachers' ratings comprised the basis on which the investigator selected certain subgroups for special study (a group high in language proficiency and a group low in language proficiency), the scale merits particular attention.[1]

### Book Lists

Beginning in grade four and continuing through grade twelve, each subject was asked to list the books he had read during the previous year. For those subjects with such poor reading ability that they had not read a single book during the previous year, information was obtained on the magazines or comic books they had read in order to have at least some basis for determining their individual reading habits.

### Other Data

Among the other types of data accumulated during the course of the study were statements about the television programs the subjects watched, personality profiles, language questionnaires, records of school attendance, grades, and general state of health.

## The Communication Unit and the Maze

The definition of two terms is necessary to facilitate the comprehension of subsequent material summarized in this section.

### The Communication Unit

Grammatically, the communication unit is each independent clause and all of its modification or elaboration (between two pauses in oral language). Semantically, the communication unit is a group of words which cannot be further divided without the loss of their essential meaning. Basically, this is what Watts termed "the natural linguistic unit." And in more recent research, this same method of segmentation has been called the

---

[1] A sample of the teacher's rating scale may be found in the appendix of this monograph.

T-Unit.[1]

To illustrate the method of segmenting the subjects' language into communication units, several simple examples may be shown:

*I know a boy with red hair.*

This would be a single communication unit since one could not divide "I know a boy" from "with red hair" without the loss of the unit's essential meaning or a part of the independent clause.

Similarly, *I know a boy who has red hair* would also be a single unit of communication. However, *I know a boy, and he has red hair* would be divided into *two* communication units since this is an example of two independent grammatical predications--even though they comprise a single compound sentence.

Thus in all cases, the words comprising a communication unit will fall into one of the following three categories:

(1) independent grammatical predications

(2) answers to questions which lack only the repetition of the question elements to satisfy the criterion of independent predication

(3) words such as "Yes" or "No" when given in answer to a question such as "Have you ever been sick?" These are really part of (2), above.

By definition, then, these units are not exclusively semantic. They are also syntactic, being composed of independent predications; they can be identified by their form as well as by their meaning.

---

[1] See A. F. Watts, *The Language and Mental Development of Children* (Boston: D. C. Heath & Company, 1948), pp. 65-66, and Kellogg W. Hunt, *Grammatical Structures Written at Three Grade Levels* (Champaign, Illinois: National Council of Teachers of English, 1965). Actually, Watts' use of the term "essential meaning" would be difficult to define scientifically. As a consequence, the formal definition adopted for this research--that of an independent clause between two silences--becomes more defensible than the semantic (or essential meaning) definition.

## The Language Maze

A *maze is a series of words or initial parts of words which do not add up to a meaningful communication unit*. It is an unattached fragment or a series of unattached fragments which do not constitute a communication unit and are not necessary to the communication unit.

A maze may be short, consisting of only one word or one fragment of a word; conversely, any given maze may consist of from ten to twenty or more words or fragments of words. In many respects this particular form of language behavior resembles the physical behavior of someone who is trapped in a spatial maze.[1]

### Hypotheses Being Tested

During the course of the investigation the answers to a series of hypotheses have been gained in varying exactitude. These are summarized below and are accompanied by cross-references indicating where more detailed information may be found.

1. *Hypothesis*: Subjects who have developed skill in spoken language, using pitch, juncture, and stress effectively for purposes of oral communication, will also develop the skills of writing, reading, and listening more fully than those who have not developed the same degree of skill in the spoken language.

*Conclusion*: During the course of the investigation annual teachers' ratings were obtained on each subject indicating the individual teacher's judgment as to the subject's oral language proficiency. A thirteen-year cumulative average of these ratings was computed for each subject, and one can assume that those who receive the highest cumulative averages were those capable of effectively using pitch, juncture, and stress in oral communication. These same subjects (those rated high in oral language proficiency) invariably show the greatest proficiency in reading, writing, and listening. (Detailed findings are contained in Parts V and VI of this monograph;

---

[1] These mazes are the same as "garbles" in the research of Roy C. O'Donnell, William J. Griffin, and Raymond C. Norris, *Syntax of Kindergarten and Elementary School Children* (Champaign, Illinois: National Council of Teachers of English, 1967), p. 39.

summaries are contained within the present section.)

2. Hypothesis: Subjects with the highest degree of ability in speech and writing will use more varied and flexible syntax than those with less ability.

Conclusion: Within equal samples of language, each group studied uses approximately the same proportion of structural patterns and approximately the same proportion of noun, adjective, and adverb clauses. However, the High group consistently uses the highest average number of words per communication unit in both written and oral language and has the highest average number of dependent clauses per unit of any group studied. (Detailed findings are contained in Parts IV, V, and VIII of this monograph; summaries are contained within the present section.)

3. Hypothesis: Subjects with high language proficiency will use relational words (i.e., subordinating connectors such as moreover, although, because, etc., earlier, more often, and more accurately than other subjects.

Conclusion: The findings on the ability to correctly use subordinating connectives point up a remarkable degree of superiority on the part of the High group and those in socio-economic group I. (Detailed findings are contained in Part VI of this monograph; a summary is contained within the present section.)

4. Hypothesis: Subjects with high language proficiency will express more frequently than other subjects such matters as tentativeness and supposition. Their language will reflect flexibility rather than rigidity of thinking and reacting.

Conclusion: The High group uses more tentativeness, supposition, and figurative language than the Low group. Conversely, the Low group has a higher proportion of irrelevancies in their language than the High group. (See Walter Loban, The Language of Elementary School Children, p. 54.)

5. Hypothesis: Predictable stages of growth in each feature of language will emerge and can be identified for individual subjects and groups.

Conclusion: Now that complete longitudinal data have been accumulated, work has commenced which hopefully will provide answers to this hypothesis. A stochastic model will be applied to the data to determine whether or not it is possible to accurately predict a subject's high school performance (in language) from what he accomplishes in elementary school, i.e., his observable language characteristics.

6. Hypothesis: Subjects proficient in language will use more optional grammatical transformations in their sentence structures and will be more accurate in their obligatory grammatical transformations than those lacking in proficiency.

Conclusion: From the examination of nonstandard usage used by the subjects, one can see that the High Caucasian group (selected on the basis of teachers' ratings) has a lower incidence of deviations than the other groups studied. From this it can be concluded that subjects proficient in language (in this case the High Caucasian group) are more accurate in their obligatory transformations than subjects who lack proficiency. (Detailed findings are contained in Part IX of this monograph; a summary is contained within the present section.) On the question of optional transformations, previous analysis indicates that proficient subjects will use more optional transformations than subjects who lack proficiency. (See Walter Loban, *Language Ability: Grades Seven, Eight, and Nine*, pp. 54-55.)

7. Hypothesis: Subjects with high ability in language will use more adverbial clauses of cause, concession, and condition than subjects of low language ability.

Conclusion: Within equal samples of language, subjects rated high in language proficiency use more clauses of every type (noun, adjective, and adverb) than do subjects of less proficiency. (Detailed findings are contained in Part VIII of this monograph; a summary is contained within the presentation.)

8. Hypothesis: Subjects from above average socio-economic status will develop language power earlier and to a greater competency than subjects from below average socio-economic status.

Conclusion: The findings on socio-economic status indicate that on every aspect of language studied those of high socio-economic status invariably gain power over language earlier and to a greater degree than do subjects of low socio-economic status. (Detailed findings are contained in Parts IV, V, and VI of this monograph; summaries are contained within the present section.)

9. Hypothesis: If a subject's socio-economic position remains constant, it will be possible to predict accurately his growth in language proficiency.

Conclusion: A stochastic model will be applied to the data from the standpoint of socio-economic status. (See the explanatory material under a previous hypothesis dealing with predictable stages of growth.)

10. Hypothesis: The incidence of nonstandard English usage will be significantly less frequent for subjects of above average socio-economic status than for those of below average socio-economic status.

Conclusion: From the study of nonstandard English usage (Part IX), it can be concluded that subjects of high socio-economic status have a lower incidence of deviations from standard English than do subjects of low socio-economic status. This follows logically from the fact that the group having the least problem with standard usage--the High Caucasian group--is composed in large measure of subjects of high socio-economic status whereas the two groups which have the most difficulty with nonstandard usage (Caucasian, low in language ability, and Negro, low in language ability) contain much larger proportions of subjects in the middle and low socio-economic categories.

Some hypotheses are still in the process of being examined, and as time and money permit, each will be thoroughly studied and reports made available. Among these hypotheses are the following:

1. Subjects with high language proficiency will more frequently use the economy of phrases (of all kinds) in preference to longer subordinate clauses whenever a choice between the two is possible.

2. Subjects with high language proficiency will use modal auxiliaries and aspect to control the verb at an earlier age and more often than subjects with low language ability.

3. The relationships of ability in speech, reading, writing, and listening will be positive for the subjects. However, there will not be a uniform chronological development of all four areas of the language arts and the development of these abilities in individuals will not take place in an even manner. The tendency will be for overall development to follow the gains of each individual subject, but some subjects will make notable progress in one area of development (for example in reading or listening) at a time when very small gains in power are made in other areas (for example in speech or writing).

4. Subjects with high language proficiency will be able to use and to interpret metaphorical and symbolic language and pictures with greater success than subjects with low language proficiency.

5. Subjects who have the most interaction with other persons will develop the skills of language more rapidly than those whose contacts with other persons are more limited.

6. Subjects with highest ratings on school attendance will also rank highest on development of skill in language.

## Results of the Investigation

In the paragraphs below each phase of the research will be briefly summarized, indicating the title and section number where a more detailed analysis of the data may be found.

### Fluency with Oral Language (Part IV)

Fluency with oral language generally carries the connotation of a readiness to express oneself combined with a smooth, easy flow of words such as frequently found in the language of statesmen or public speakers. In studying the language of children, however, one cannot expect to find the same degree of proficiency. Children, even at the high school level, obviously lack the polish and rhetorical skill of the trained public speaker; and in examining their language one must search for less obvious indications of their fluency--for evidence pertaining to their volume of language, their length of communication units, and their freedom from language tangles (mazes) which tend to limit the effectiveness of communication.

A total of nine measures of oral language were used to compare the relative fluency of the High, Low, Central, and Total groups of subjects. Data on each group were presented on a year-by-year basis (kindergarten through grade twelve) using mean averages and graphic presentations. The nine measures consist of the following:

Volume

(1) total number of words in transcript
(2) total number of communication units in transcript
(3) total number of words in communication units
(4) average number of words per communication unit

Coherence

(5) total number of mazes in transcript
(6) total number of words in mazes
(7) average number of words per maze
(8) mazes as a percentage of communication units
(9) maze words as a percentage of total words

The findings on these nine measures of fluency indicate that the High group is obviously more fluent than any of the other groups studied. These subjects (the High group) not only use a greater volume of language and a higher average number of words per communication unit than the Low, Central, or Total groups but also have a lower average number of words per maze and a lower proportion of maze words as a percentage of the total words in their transcripts. The Central group and the Total group almost invariably fall into the middle range one would term to be "average"; and at the opposite extreme, the Low group shows the unmistakable signs associated with a lack of fluency with language: a low volume of language, a low average number of words per communication unit, a high average number of words per maze, and a high proportion of maze words as a percentage of total words. To state it more succinctly, the Low group not only says less than every other group but also has an obvious difficulty in doing so.

Of the nine measures of oral language designed to gauge the subjects' relative fluency, the three which come closest to treating each subject alike and thereby providing accurate indices of fluency are the average number of words per communication unit, the average number of words per maze, and maze words as a percentage of total words. These three measures have been examined from the standpoint of the subjects' socio-economic status, and in each case the findings are the same: those of high socio-economic status prove to be markedly more fluent than those of low socio-economic status. Seldom is there any overlapping among the upper three socio-economic groups opposed to the lower three, and the obvious conclusion is that fluency and socio-economic status are very definitely related.

## Proficiency with Written Language (Part V)

In attempting to judge a subject's written language proficiency, a specially designed set of criteria must be used to gauge the effectiveness of this particular form of communication. In the present research such a gauge of written language proficiency, *The Index of Writing Ability*, has been used. (See the section *Methods*, under the heading *Scales Developed during the Course of This Investigation*.) In addition, the written language of the High, Low, Central, and Total groups was also studied from the standpoint of average number of words per communication unit; and completing the data presented in this section is an examination of written language ability as it relates to socio-economic status.

The findings on written language indicate that from grades four through twelve the High, Low, Central, and Total groups show a steady upward movement in average number of words per written communication unit. In addition, as the subjects grow older, each group improves the *quality* of its written compositions--although it should be noted that the subjects as a whole receive higher ratings (scores) on their compositions in grades seven, eight, and nine than in either the earlier period studied (grades four, five, and six) or in the later period studied (grades ten, eleven, and twelve). Thus *in relation to their age*, the subjects as a whole tend to write more proficiently during the junior high school period than in either the late elementary or high school years.

A comparison of the High, Low, Central, and Total groups indicates that in every year studied (grades four through twelve) the High group consistently has the highest average number of words per written communication unit as well as the highest ratings on their compositions (as scored by *The Index of Writing Ability*). The Central and Total groups fall into the middle or average range; and at the opposite extreme is the Low group, consistently having not only the lowest average number of words per communication unit but also the lowest ratings on their compositions.

From the standpoint of socio-economic status, an almost perfect socio-economic progression emerges for both average number of words per written communication unit and the quality (ratings) of the written compositions. Those of high socio-economic status invariably have a higher average number of words per written communication unit and receive higher ratings on their compositions than do subjects of low socio-economic status. Thus it seems quite obvious that there is a very definite relationship between socio-economic status and proficiency with written language.

## Tests of Reading Achievement, Listening, Use of Subordinating Connectives, and Teachers' Ratings (Part VI)

Reading Achievement: Beginning in grade four and continuing through grade eight, the Stanford and California Tests of Reading Achievement were administered to each subject in the study. The findings on these data indicate that those rated high in language ability (the High group) achieve substantially higher scores on tests of reading achievement than do those rated low in language ability (the Low group). The Central and Total groups continue to follow their typical pattern, reading at the middle or average range. In addition there is a pronounced disparity in reading achievement scores which follows socio-economic lines: those of high socio-economic status achieve high reading scores; those of low socio-economic status typically read at a point far below their expected age norm.

Listening Tests: The STEP Test of Listening Ability was administered in grades eight and nine and again in grades eleven and twelve. The findings on listening indicate that the High group once again exhibits substantially higher scores than any other group. The Central and Total groups are at the middle or average range, and once more the Low group shows the least degree of proficiency. From the standpoint of socio-economic status, the data once again form an almost perfect progression. In addition, there is no overlapping whatsoever; those in socio-economic groups I, II, and III invariably receive higher listening test scores than do those in socio-economic groups V, VI, and VII. Thus the obvious conclusion is that listening is not only related to proficiency or lack of proficiency in language (data on the High, Low, Central, and Total groups) but also to the socio-economic status of the subjects studied.

Tests of Subordinating Connectives: Beginning in grade five a test of subordinating connectives was administered to each subject in the study. Testing was done on an annual basis using an adapted completion form of a multiple-choice test initially devised by A. F. Watts.[1] The test contains fifty items and is designed to assess the correct usage of subordinating connectives such as however, therefore, and although.

The findings on this aspect of the research indicate that the ability to correctly use subordinating connectives is one of the most crucial aspects of proficiency with language. Seldom in the entire longitudinal study has the disparity between the High and Low groups or between the upper and lower socio-economic groups been so clearly defined. Those rated high in language ability (the High group) and those of high socio-economic status (socio-economic group I) are able to use subordinating connectives more proficiently in grade five than those rated low in language proficiency (the Low group) or those of low socio-economic status are capable of in grade twelve. In itself this disparity of seven full years seems remarkable. But it is all the more remarkable when one considers that subordinating connectives are widely used in newspapers, magazines, and even more so in literature. Words such as because, although, therefore, and however are the key words by which an author changes tone or qualifies his statements; and if one is unable to comprehend such words, it seems likely that little will be gained from what is read. Thus, the ability to correctly use (and comprehend) subordinating connectives is apparently one of the important distinctions between the elaborated language code of the advantaged social classes and the restricted language code of the disadvantaged social classes.

Teachers' Ratings: Teachers' ratings of the subjects' oral language proficiency were accumulated annually for each subject in the research, and as the investigator indicated previously a thirteen-year cumulative average of these ratings (kindergarten through grade twelve) provided the basis on which the High and Low groups were selected.

---

[1] Examples of Watts' multiple-choice type test together with his conclusions (i.e., that the correct usage of subordinating connectives increases with increasing age) may be found in A. F. Watts, op. cit., pp. 82-84 and pp. 302-305.

For purposes of comparison, cumulative averages of teachers' ratings for the High, Low, Central, and Total groups were presented for grades three, six, nine, and twelve. In each case the teachers' ratings show a remarkably high degree of consistency. This, of course, is precisely what one would expect and provides ample evidence that teachers' ratings of the subjects' oral language proficiency are a sound basis for selecting the subgroups studied in this research.

Teachers' ratings were also examined from the standpoint of socio-economic status. The findings on this method of analysis indicate a clear socio-economic progression: those of high socio-economic status receive the highest ratings; those of low socio-economic status, the lowest ratings. Again, no overlapping exists. In all cases, those in the upper three socio-economic groups receive higher ratings than do those in the lower three socio-economic groups receive higher ratings than do those in the lower three socio-economic groups. Thus, the data clearly indicate that teachers' ratings not only provide a sound basis of selecting those high and low in language proficiency but also show the same socio-economic progression found throughout the research.

### Interrelations Found in the Research (Part VII)

For use in this phase of the research the term interrelation has been defined as a close degree of relationship between two or more variables. In some cases the relationship may appear to be causal. For example, low socio-economic status appears to *result* in lack of proficiency in writing; i.e., one appears to *cause* the other. In other cases two or more variables may have a high degree of *association*--a degree of association which proves to be a valuable finding of the research--and yet not be causally related. For example, a high average words per unit in written language is typically associated with a high average words per unit in oral language; and yet it would not appear sound to state that the former *causes* the latter. As a further clarification, it should be borne in mind that even when there appears to be a causal relationship such as in the case of socio-economic status, *this does not imply that the relationship is rigid*. In other words the term "low socio-economic status" carries the implication of uneducated parents, a lack of books in the home, a lack of intellectual stimulation, schools which may be below national standards, etc. Each of these is obviously subject to change, not only by advancements in our social and economic systems but also through the efforts of teachers working closely with such pupils in the schools.

The findings on this phase of the research clearly indicate that the various aspects of language proficiency (speaking, reading, writing, and listening) are interrelated, not only to each other but also to the socio-economic status of the subjects studied. Actually, this could be concluded simply as a matter of logical deduction from the data. Similarly, when examining the same data from the standpoint of socio-economic status, one can see as a matter of reason that those of high socio-economic status have invariably shown a greater proficiency with language than those of low socio-economic status.

Still, despite the overwhelming evidence indicating that the various aspects of language are interrelated, logical deduction must be substantiated by statistical analysis. When statistical techniques are applied to the data, levels of significance not only reach the standard .05 or .01 levels but often are so highly significant that the actual level defies measurement; i.e., the level of significance sometimes reaches .00000+ which goes beyond the level of published tables measuring significance. Thus, statistics and logic reinforce one another to a high degree.

From the standpoint of a personality inventory administered in grade eleven, the data also show significant interrelations. Subjects who obtained high teachers' ratings, high writing scores, and high average number of words per oral communication unit are found significantly more prudent than other subjects in the research.[1] This is true in every case examined and tends to point toward the possibility that in our present society, curriculum and methods of teaching may be designed in such a way as to enable those with strong prudent orientations to achieve the greatest success in language. Or it may mean that those who develop language skill are those whose basic personality orientation is prudent.

---

[1] The prudent individual has been defined as one who is concerned with the long-run consequences of acts. He will renounce opportunities for the immediate gratification of proximate ends where this may conflict with more remote or general values. He seeks to rationalize his social environment by widening his scope of cognition, rather than by narrowing or compartmentalizing it, and thus is motivated toward the behavioral sciences.

### A Special Study on the Elaboration of Language (Part VIII)

For purposes of this phase of the research, the elaboration of language has been defined as the use of various strategies of syntax through which the individual communication unit is expanded beyond the use of a simple subject and predicate, beyond a kernel sentence.

The elaboration study uses the same High and Low groups (N = 35) that have been used throughout the research. However, as a result of the time-consuming nature of the analysis, the Random group (N = 35) has been used in lieu of the Total group. In all cases data on both the oral and written language of the subjects were presented for grades six, eight, ten, and twelve.

The sample of language used in the elaboration study was a total of 30 communication units per subject (per grade). These 30 units were chosen to ensure complete comparability; i.e., in all cases the units were selected from identical parts of each subject's transcript.[1]

The findings on the elaboration study are two-fold in that the elaboration of language was examined from two completely different points of view.

### Part One

In the first case, the analysis focused on percentage comparisons of the High, Low, and Random groups in order to determine whether or not the three groups use different proportions of (1) the ten basic structural patterns, (2) noun, adverb, and adjective clauses, (3) noun clauses as to function, and (4) types of adverb clauses.

---

[1] In the case of written language, the first 30 communication units in the subject's composition were used. In some cases a given composition may have been less than 30 units. However, this had no effect on the presentation since each computation was done on an individual basis before group means were computed.

The findings on these first four measures indicate that no remarkable differences exist among the groups. In other words, within the limits of their relative abilities to use language, each group tends to use roughly the same proportion of the various types of sentence patterns, noun clauses, adverb clauses, etc. These findings, however, even though they might be termed negative findings, lead to a very important conclusion: it is not the relative proportions of structural patterns, noun clauses, and adverb clauses which will distinguish one's proficiency or lack of proficiency with language but rather what is accomplished within the communication unit in terms of expanding, broadening, and elaborating one's spoken and written language.

Part Two

The second half of the elaboration study used three measuring devices designed to probe more deeply into the question of elaborated usage. These were (1) the average number of words per communication unit, (2) the average number of clauses per communication unit (main plus dependent), and (3) the average number of dependent clauses per communication unit.

From the evidence presented on these three measures, the reader can see that in every case (all years on both oral and written language) the mean averages indicate substantial, clearly defined differences among the High, Low, and Random groups. The High group invariably shows the greatest degree of proficiency in using elaborated language; the Random group falls into the middle or average range; and the Low group invariably shows the least degree of proficiency.

For purposes of comparison, findings from Kellogg Hunt's research are included in those tables where both Hunt's study and the present research follow the same methodology. From the comparison shown, Hunt's findings generally place the mean for an average group of subjects at a point slightly higher than that of the High group in the present research. The reader should note, however, that these differences are not necessarily of crucial importance. Intensive research into language ability is a relatively recent phenomenon; and as other studies examine this facet of human behavior, definitive norms of development will undoubtedly be established.

On the question of growth rates, the investigator has pointed out that in the case of total clauses (main plus dependent) the standard methodology is in need of improvement.

In order to focus on the precise years of growth in elaborated usage, the best method has proven to be the average number of dependent clauses per unit. This measure is not contaminated by the inclusion of main clauses, and it points up the fact that growth in elaborated usage is not virtually completed by grade six but is actually a steady process showing substantial improvements by each group from grade six through grade twelve.

## Standard English Usage
## (Part IX)

For use in this phase of the research, the investigator has adopted Fries' widely accepted definition of standard English usage. According to Fries, acceptable standard English is

> a set of language habits in which the major matters of the political, social, economic, educational, religious life of this country are carried on. To these language habits is attached a certain prestige, for the use of them suggests constant relations with those responsible for the important affairs of our communities. It is this set of language habits . . . which is the "standard" not because it is any more correct or more beautiful or more capable than other varieties of English; it is "standard" solely because it is the particular type of English used in the conduct of the important affairs of our people. It is also the type of English used by the socially acceptable of most of our communities, and insofar as that is true it has become social or class dialect in the United States.[1]

The definition of acceptable standard English, together with the fact that some nonstandard language is obviously a matter of social-class dialect resulted in the decision to study Caucasian and Negro subjects separately and to use a Random group as a representation of a typically mixed sample of all students. Thus, from kindergarten through grade twelve the following four groups have been studied:

---

[1] Charles Carpenter Fries, American English Grammar (New York: Appleton-Century-Crofts, 1940), p. 13.

(1) Caucasian: high in language proficiency; N = 21; selected on the basis of a cumulative average of teachers' ratings (the 21 highest Caucasians).

(2) Caucasian: low in language proficiency; N = 21; selected on the basis of a cumulative average of teachers' ratings (the 21 lowest Caucasians).

(3) Negro: low in language proficiency; N = 21; selected on the basis of a cumulative average of teachers' ratings (the 21 lowest Negroes).

(4) Random: N = 50; containing 44 Caucasians, 5 Negroes, and 1 Oriental; proportionally selected from a table of random number to represent the typical ethnic ratios of the United States as a whole.

In examining questions of nonstandard usage, the study deals with *obvious* departures or deviations from standard English. Disputed items of usage such as *It's me*, *Who are you looking for*? or *Everyone has their instructions* have been ignored. Instead we mean, by "nonstandard," usages such as these:

The calf don't want no milk.
He has ate.
He washing they clothes.
They was here yesterday.

The four groups studied were equated by a system of *adjusted mean averages*; thus every group and every year is directly comparable to any other.

Three major conclusions have been derived from this phase of the research.[1] These consist of the following:

Members of the Negro group do indeed encounter gigantic problems in attempting to acquire the prestige dialect. In thirteen years of schooling they make enormous improvement in subject-verb agreement and in using auxiliaries, yet almost no improvement in using the verb to be appropriately or in standardizing the verb forms. These subjects--primarily from economically and culturally disadvantaged homes--obviously expend much of their energy in overcoming problems that Caucasian subjects never encounter.

---

[1] A much more detailed series of conclusions may be found in Walter Loban, *Problems in Oral English* (Champaign, Illinois: National Council of Teachers of English, 1966), pp. 47-57.

Subjects not handicapped by social class dialect (the majority of Caucasians) have their greatest problems in categories related to clarity of expression rather than habitual usage. The difficulties encountered by these subjects (High Caucasian, Low Caucasian, and Random) occur in five categories in the following order of frequency:

1. inconsistency in the use of tense
2. careless omission of words (excluding omission of auxiliaries)
3. lack of syntactic clarity
   ambiguous placement of words, phrases, and clauses
   awkward and incoherent arrangements of expression
4. confusing use of pronouns
5. trouble with agreement of subject and verb when using there is, there are, there was, and there were

Obviously, each of these five problems transcends usage. Rather, they are matters of sensitivity to clarity and precision of communication. This is not at all what the researcher had expected. He had assumed that problems of usage--such as nonstandard verb forms and agreement of verb with subject (It don't, I would've took him, I seen it)--would constitute the major difficulty for most pupils who did not speak a social class dialect. Instead, exactly the opposite proves to be the case. Without exception the incidence on categories concerned with habitual usage adheres to the horizontal line representing zero. Thus for Caucasian subjects (in general) a combination of schooling reinforced by the use of standard English in an economically advantaged environment virtually eliminates problems of habitual usage and allows these subjects to concentrate on clarity of expression.

Lastly, the summation of all deviations (Total Deviations--Figure 37) points up the fact that only those of exceptional language ability (the High Caucasian group) are able to maintain their control over deviations from standard English while simultaneously increasing the volume and complexity of their spoken language.

# BIBLIOGRAPHY

Bernstein, Basil. "Language and Social Class," *British Journal of Sociology*, XI. London: Routledge and Kegan Paul, Ltd. 1960. pp. 271-276.

________. "Social Class and Linguistic Development: A Theory of Social Learning," *Education, Economy and Society, A Reader in the Sociology of Education*. Edited by A. H. Halsey, Jean Floud, and C. Arnold Anderson. New York: Macmillan, Free Press of Glencoe. 1961. pp. 288-314.

________. "Some Sociological Determinants of Perception," *British Journal of Sociology*, IX. London: Routledge and Kegan Paul, Ltd. 1958. pp. 159-174.

Bruner, Jerome S., Jacqueline J. Goodman, and George A. Austin. *A Study of Thinking*. New York: John Wiley and Sons. 1957.

Cassirer, Ernst. *Essay on Man*. New York: Doubleday and Company. 1953.

Charters, W. W. "Minimum Essentials in Elementary Language and Grammar, A Second Report," *16th Yearbook of the National Society for the Study of Education*. Pt. I. Chicago: NSSE. 1917.

Chomsky, Noam. *Syntactic Structures*. Gravenhage: Mouton and Company. 1957.

Fries, C. C. *American English Grammar*. New York: Appleton-Century-Crofts. 1940.

Harrell, Lester E. "A Comparison of the Development of Oral and Written Language in School-Age Children," *Society for Research in Child Development Monographs*, XXII, No. 3. Purdue University: Child Development Publications. 1957.

Hays, William L. *Statistics for Psychologists*. New York: Holt, Rinehart and Winston, 1963.

Heider, F. K. and G. M. Heider. "A Comparison of Sentence Structure of Deaf and Hearing Children," *Psychological Monographs*, 52:1. 1940. pp. 42-103.

Hildreth, Gertrude H. "Interrelationships between Written Expression and the Other Language Arts," Elementary English, 31. 1954. pp. 40-43.

Hunt, Kellogg W. "A Synopsis of Clause-to-Sentence Length Factors," English Journal. 5:4. April 1965. pp. 300-309.

_______. Grammatical Structures Written at Three Grade Levels. Champaign, Illinois: National Council of Teachers of English. 1965.

Johnson, Wendell. "Studies in Language Behavior: I. A Program of Research," Psychological Monographs, 56:2. 1944.

Krumboltz, John D., editor. Learning and the Educational Process. Chicago: Rand McNally and Company. 1965. See Chapter 5 by Walter Loban. "Language Proficiency and School Learning." pp. 113-132.

Lawton, Denis. "Social Class Differences in Language Development: A Study of Some Samples of Written Work," Language and Speech, 6:3. July-September 1963. pp. 120-143.

Loban, Walter. Language Ability: Grades Seven, Eight, and Nine. Washington, D.C.: U.S. Government Printing Office. 1966.

_______. The Language of Elementary School Children: A Study of the Use and Control of Language, Effectiveness in Communication, and the Relationships among Speaking, Reading, Writing, and Listening. Champaign, Illinois: National Council of Teachers of English. 1963.

_______. Problems in Oral English. Champaign, Illinois: National Council of Teachers of English. 1966.

McCarthy, Dorothea. "Language," Encyclopedia of Educational Research. Edited by W. S. Monroe. New York: Macmillan. 1950. pp. 165-172.

_______. "Language Development," A Handbook of Child's Psychology. Edited by Carl Murchison. Worcester, Massachusetts: Clark University Press. 1933.

Martin, Clyde. "Developmental Interrelationships among Language Variables in Children of the First Grade," Elementary English, 32. 1955. pp. 167-171.

Minnesota Scale for Paternal Occupations. Institute of Child Welfare. Minneapolis: University of Minnesota Press. n.d.

O'Donnell, Roy C., William J. Griffin, and Raymond C. Norris. Syntax of Kindergarten and Elementary School Children. Champaign, Illinois: National Council of Teachers of English. 1967.

Piaget, Jean. The Language and Thought of the Child. New York: Harcourt, Brace and World. 1926.

Riling, Mildred. Oral and Written Language of Children in Grades 4 and 6 Compared with the Language of Their Textbooks. Durant, Oklahoma: Southeastern State College. 1965.

Sapir, Edward. Language. New York: Harcourt, Brace and World. 1921.

Siegel, Sidney. Nonparametric Statistics for the Behavioral Sciences. New York: McGraw-Hill Book Company. 1956.

Smith, Dora V. "Growth in Language Power as Related to Child Development," 43rd Yearbook of the National Society for the Study of Education, Pt. II. Chicago: Department of Education, University of Chicago. 1944.

________. Selected Essays. New York: Macmillan. 1964.

Starr, Wendell R. Structural Dislocation in the Conversation of High School Students. Ph.D. Thesis. Minneapolis: University of Minnesota. 1959.

Strickland, Ruth G. The Language of Elementary School Children: Its Relationship to the Language of Reading Textbooks and the Quality of Reading of Selected Children. Bloomington, Indiana: Indiana University. 1962.

Thorndike, E. L., and I. Lorge. The Teacher's Word Book of 30,000 Words. New York: Teachers College, Columbia University Bureau of Publications. 1944.

Vinacke, Edgar W. The Psychology of Thinking. New York: McGraw-Hill Book Company. 1952.

Warden, C. J. "The Relative Economy of Various Modes of Attack in the Mastery of a Stylus Maze," Journal of Experimental Psychology, VII. 1924. pp. 243-275.

Watts, A. F. The Language and Mental Development of Children. Boston: D. C. Heath. 1948. (Also published in London: George G. Harrap. 1944.)

# APPENDIX I

## Breakdown of Individual Compositions in Years When More Than One Composition per Subject Was Obtained

In grades ten, eleven, and twelve it was possible to obtain more than one composition per subject. Generally, a total of seven compositions per subject were obtained during the three-year period. These consist of the following:

10-1 (Topic)
10-2 (Picture Stimulus)
11-1 (Topic)
11-2 (Picture Stimulus)
11-3 (Topic, written at school)
12-1 (Topic)
12-2 (Picture Stimulus)

It would require a great deal more data before one could make definitive statements about whether or not students write more proficiently on a topic or when using a picture stimulus. On the other hand, it was felt that the precise breakdown of the data accumulated should be presented as a matter of interest. The reader should note that in every case each subject wrote on the same topic and was given the same picture stimulus as every other subject; the only exception was the topic composition written at school for which a wider latitude was allowed. All compositions except 11-3 were written under the supervision of the investigator and his staff. The precise breakdown of the data is as follows:

| Type of Composition | High Group | Low Group | Central Group | Total Group |
|---|---|---|---|---|
| 10-1 (Topic) | 2.20 | 3.65 | 2.86 | 2.88 |
| 10-2 (Picture) | 1.91 | 3.46 | 2.74 | 2.72 |
| 11-1 (Topic) | 2.06 | 3.50 | 2.71 | 2.73 |
| 11-2 (Picture) | 2.26 | 3.46 | 2.69 | 2.75 |
| 11-3 (Topic at school) | 1.70 | 3.18 | 2.57 | 2.46 |
| 12-1 (Topic) | 1.94 | 3.37 | 2.72 | 2.70 |
| 12-2 (Picture) | 2.11 | 3.34 | 2.68 | 2.69 |

From examining the composition written at school (11-3), it can be seen that all groups of subjects receive a higher rating on this composition than on the others done during the three high school years. On the other hand, the differences are not large enough to cause a change in the configuration of the groups. In other words, the improvement is a general improvement affecting all groups of subjects in approximately the same way; and the improvement itself is actually not sufficient to alter the basic findings on the relationship among the groups. In addition, part of the improvement (the higher ratings) on compositions written at school may be traced to the fact that subjects least proficient in language ability are generally the ones on whom it was not possible to obtain a school composition. This is most notably the case with the Low group, and as a result of the least proficient subjects' not being included in the average, the Low group as a whole appears to move upward more markedly than one might expect.

## Teacher's Evaluation of Language Skill

Name of pupil . . . . . . . . . . . . . . . . . . . Date of Rating . . . . . . . . . .
(last name first) (month) (year)

Teacher . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

TO TEACHERS

Your help on the following points will be greatly appreciated. In rating each item, disregard your ratings for that pupil on every other item; try not to let general impressions color your judgments about specific aspects of the pupil's language. We would most certainly appreciate any comments, illustrations or noteworthy episodes that throw light on the ratings. If you can give us the time, write them in any empty space or on the last page.

Number 1 is LOW and is described by the words at the left-hand side of the scale.

The numbers 2, 3, and 4 represent degrees between HIGH (5) and LOW (1).

Number 5 is HIGH and is described by the words at the right-hand side of the scale.

PLEASE CHECK BY ENCIRCLING THE NUMBER APPROPRIATE IN EACH CASE.

EXAMPLE: You consider a pupil just slightly better than average on a certain skill. You circle the number four, as follows:

1 2 3 ④ 5

1. Skill in communication

| LOW | | HIGH |
|---|---|---|
| incompetent with all language; no awareness of listeners; speaks without trying to evoke understanding from others; halting pace of words and inflections of voice not adjusted to listeners; writes like an illiterate person | 1 2 3 4 5 | uses language in any form with power, proficiency, and pleasure; adjusts pace of words and inflection to listeners; uses an "imparting tone"; is aware of need to make self understood; writes competently with a sense of style |

### 2. Organization, purpose, and point

| LOW | | HIGH |
|---|---|---|
| rambles, no sense of order or of getting to the point; rattles on without purpose; cannot tell a story or express ideas in a suitable sequence | 1 2 3 4 5 | plans what is said; gets to the point; has control of language; can tell a story or express ideas in a suitable sequence |

### 3. Wealth of ideas

| | | |
|---|---|---|
| | 1 2 3 4 5 | |
| seldom expresses an idea; appears dull and unimaginative; doesn't originate suggestions or plans | | expresses ideas on many different topics; makes suggestions on what to do and how to carry out class plans; shows imagination and creativity in many ways |

### 4. Fluency

| | | |
|---|---|---|
| seldom talks; exceptionally quiet; needs to be prompted to talk; overly laconic | 1 2 3 4 5 | talks freely, fluently, and easily; also talks brilliantly and effectively |

### 5. Vocabulary

| | | |
|---|---|---|
| uses a meager vocabulary, far below that of most pupils this age; inarticulate, mute | 1 2 3 4 5 | uses a rich variety of words; has an exceptionally large, effective, and growing vocabulary; speaks fluently with vocabulary suited to listeners |

### 6. Quality of listening

| | | |
|---|---|---|
| inattentive, easily distracted; seldom attends to the spoken language of others; doesn't listen for relationships or note how main ideas control illustrations or subordinate ideas | 1 2 3 4 5 | superior attentiveness and understanding of spoken language; a creative listener |

## 7. Quality of writing

| LOW | | HIGH |
|---|---|---|
| lacks coherent organization; often does not follow conventional usage and spelling; a very poor writer | 1 2 3 4 5 | organizes in terms of a purpose; excludes irrelevant materials; subordinates elements not to be stressed; uses appropriate style, acceptable usage, and conventional spelling; a superior writer |

## 8. Reading

| | | |
|---|---|---|
| reads only what he has to read; "deciphers" print rather than reads it; gets no ideas from books; will not very likely read more than newspapers and magazines (if that) when schooling is over | 1 2 3 4 5 | reads voraciously, easily, and with interest books of merit and difficulty; absorbs ideas from books easily and accurately; will undoubtedly read much all throughout life |

---

## 1. Activity

| | | |
|---|---|---|
| listless, apathetic, passive; has very little to do with others; prefers to sit; has low energy level; has slow reactions; seems always tired | 1 2 3 4 5 | very active; relates easily and freely with others; has a high energy level; enjoys physical activity; has quick reactions; seems exceptionally vital and alive |

2. Acceptance or rejection

| **LOW** | | **HIGH** |
|---|---|---|
| rejected by others, disliked; almost never chosen by others or included in activities; almost entirely isolated | 1 2 3 4 5 | notably popular with everyone; others seek his company; never lacks companionship; always included in peer-group activities |

---

OTHER COMMENTS:

Your comments here on the language or general adjustment of this pupil are most helpful to the research. Any comments will be of great interest to us and deeply appreciated. (Use other side if necessary.)